XXVI.

VOL IV. MAY, 1850. NO. 2.

THE

WESTERN JOURNAL,

OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE,

AND

GENERAL LITERATURE.

Agriculture and the Mechanic Arts are the basis of Civilization.

M. TARVER & T. F. RISK,
EDITORS AND PROPRIETORS.

CROSBY & NICHOLS, Boston,—Agents.

ST. LOUIS:
PRINTED AT THE ST. LOUIS UNION OFF

1850.

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M. TARVER and T. F. RISK, Editors and Proprietors.

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NOTE.—We owe an apology to our much esteemed correspondent, J. T. Cleveland, Esq., of Mo., for omitting to insert his valuable article on the culture of hemp, in the table of contents of the last number of the Western Journal. The article will be found at page 51. We take this occasion to commend it to the perusal of the hemp growers throughout the country. EDITORS.

THE

WESTERN JOURNAL.

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ART. I.—INTERNAL IMPROVEMENTS—PLANK ROADS.

Although money is generally regarded as the principal agent of commerce, yet when we analyze commercial operations between different countries, we find them based, almost entirely, upon the exchange of consumable commodities. The exchangeable or commercial value of these commodities, at the place of production, depends, in a great measure, upon the labor and cost of placing them in the hands of the consumer. The minimum value being at the place of production, and the maximum at the place of consumption, it follows that the producer sells at the lowest, and the consumer purchases at the highest rates; and, that the difference between the producing and the consuming prices goes, in part, to the merchant, the carrier, warehouseman and laborer; and, in part, to the capitalist, for the use of his money in effecting the exchanges.

It is obviously the true policy of every country to reduce the difference between the producing and consuming price of commodities to the lowest standard; for, on this depends, in a great degree, the prosperity of both producers and consumers. The most simple method of effecting this object, is, to place the producer and consumer as near to each other as practicable; and thus not only save the labor and cost of transportation, but, dispense with the many agents that are supported and grow rich by conducting the exchanges between distant parties. But, owing to a great variety of causes, both natural and social, the wants of civilization must always require the exchange of many commodities between distant parts of the earth; and hence the most effectual method of reducing the cost incident to these exchanges, is that of increasing the facilities for transportation.

It would be a waste of time to enter into an argument to convince the farmer that he would be benefited by an improvement that would enable him to send his crop to market and receive his salt, iron, &c., in return, for one-half the present cost: every intelligent individual is capable of appreciating the value of such improvements; and yet,

few possess sufficient individual enterprise or public spirit, to move in a matter in which all are so deeply interested.

One reason why the people of the West, especially those who have long resided here, do not take more interest in public improvement is, that they have no confidence in their ability to achieve any work that cannot be carried out by individual means. They seem not to comprehend the power of social combinations; and looking upon all schemes of improvement as being impracticable in the present condition of the country, they submit to the disadvantages under which they labor; and generally look to a change of location as the only means of improving their condition. This is more especially the case in Missouri, perhaps, than in any of the other Western States; and so long as our people shall continue to underrate their capacity to improve their condition, and, instead of making a manly effort, leave the country in search of new homes, the resources of the State must remain undeveloped, and the labor of her people comparatively unproductive.

It is folly to wait until we are more able to enter upon works of improvement before we commence; for there is little ground to hope for an accumulation of means so long as our present policy continues.

No country can prosper so long as its farmers and miners haul their products and imports on wagons over natural roads, a distance of from fifty to two hundred and fifty miles, while their commodities come in competition with those transported by steamboats, canals and railways. As well might one expect to prosper by weaving cotton sheetings on the hand loom in New England, or by hammering out nails on the anvil in Pennsylvania: and, hence, improvements in one part of the country increase the necessity of making them in others.

Believing that the enlightened people of Missouri cannot long remain blind, nor indifferent to these important truths, and trusting that the time is not far distant when a vigorous effort will be made to improve their present means of transportation; we have been attentive to the collection of facts relating to the different modes of improvement adopted by other States, to the end that our readers may be able to select such plans as are best adapted to our wants and to the means within our control.

The nature of the products, the climate and topography of a country, naturally indicate the kind of improvement most suitable to its condition. In Missouri, a thorough system will require the combination of railways—and of plank or turn-pike roads, connected with the improvement of our smaller rivers.

Railways are, doubtless, to be preferred for long lines, or for comparatively short lines, where the volume commodities or number of persons required to be transported are sufficient to give constant employment to locomotive power. But railways, canals, and navigable streams can never supply the wants of an agricultural country, so far as to dispense with the use of animal power; for almost the entire volume of agricultural products designed for market, must be moved from the place of production, in the first instance, by the producer, with his own teams; and, under the most thorough system of railway improvement, that can be expected to obtain in our State, a large part of the producers will be under the necessity of hauling their commodities from ten to twenty, and perhaps fifty miles, before they can be placed

upon the great thoroughfares of transportation; and hence the importance of improving the natural roads. And, as but little has been done in this branch of improvement in Missouri, it is our duty to institute a searching inquiry in regard to the best mode of constructing roads for the use of teams.

Until within a few years past, McAdams' method of constructing roads, with broken stone, obtained almost exclusively throughout the United States. This is doubtless a valuable and useful mode of improvement to the country in which they are located; but when we look to the small profits which they have generally paid to the stockholders, we are forced to the conclusion that McAdamized roads are destined to give place to some other plan of improvement that will be less expensive in construction, more profitable to the stockholders, and not less beneficial to the country at large. Indeed, the small profits derived from investments in these roads, afford a powerful argument against their utility; for, it would seem to be a just principle, governing every mode of improvement, that the profits of the stockholder should bear a reasonable proportion to the benefits received by the community. We regret that it is not in our power to give a complete statement of the dividends paid by all the McAdamized roads in the United States;—but if they have not paid better elsewhere than in Kentucky, they must be regarded, we think, as being greatly behind the age.

The following statement, from the report of O. G. Cates, Esq., president of the Board of Internal Improvement of Kentucky, shows that the dividends on the turnpike roads in that State, for the year 1849, were less than one and one-eighth per cent. on the investment:

(*See the following Table.*)

A Table showing the Turnpike roads in which the State is interested as a stockholder, their lengths, cost to the State, &c., &c.

	Length of road in miles.	Length of finished roads in miles.	Dividends of 1848.	Dividends of 1849.	Amount paid by the State.
Maysville, Washington, Paris and Lexington turnpike road,	64	64	$ 6,694 49	5,330 00	$213,200 00
Richmond and Lexington turnpike road,	26	26		3,779 15	75,383 00
Winchester and Lexington turnpike road,	18	18			45,100 00
Lexington to Covington, (three companies,)	85	73	1,510 00	1,963 00	200,405 77
Frankfort, Lexington and Versailles,	27	27	781 22	4,687 32	78,122 00
Frankfort to Georgetown, (two companies,)	17	17	581 00	616 00	58,725 00
Maysville and Mountsterling,	50	22	1,519 00		88,072 59
Maysville and Bracken,	18	12			25,948 00
Lexington to Danville and Lancaster,	42	42	3,674 41	3,200 10	151,382 00
Hardinsville to Crab Orchard, (four companies,)	65	65	1,568 41	3 056 55	183,113 00
Frankfort to Jefferson county line, (two companies,)	32	32	3,149 17	2,432 78	65,000 00
Louisville via Bardstown, to Tenn. line, (three companies,)	144	103	4,000 00	4,500 00	500,210 57
Louisville via Elizabethtown, to Tenn. line, (four companies,)	143	108	570 00		441,383 25
Logan, Todd and Christian turnpike road,	76	17			149,428 91
Muldrow Hill turnpike road and bridge,	5	5	170 00	475 93	55,145 46
Springfield and Bardstown,	18	18			65,190 60
Versailles and Anderson county,	12	6			20,000 00
Lexington, Harrodsburg and Perryville,	42	42			109,646 00
Owingsville and Big Sandy, dirt road,	78	78			168,783 83
Total,	962	775	$24,217 70	$30,040 83	$2,694,239 98

Revenue in 1837,	$3,992 13	Revenue in 1845,	$28,262 22
Revenue in 1838,	5,040 54	Revenue in 1846,	28,534 55
Revenue in 1839,	7,576 37	Revenue in 1847,	26 980 96
Revenue in 1840,	9,471 36	Revenue in 1848,	24,217 70
Revenue in 1841,	17,117 75	Revenue in 1849,	30,040 83
Revenue in 1842,	13,632 54		
Revenue in 1843,	19,683 33		
Revenue in 1844,	19,931 22		$237,581 50

It will be observed, that the highest dividend paid by any of the Kentucky roads in 1849, was six per cent.—this was on the Frankfort, Lexington and Versailles line, twenty-seven miles in length. This case simply proves that on great thoroughfares short lines may pay a reasonable profit; but does not sustain the idea that even short lines will pay where they are located merely for the purpose of accommodating the trade and travel of a limited district.

These discouraging facts relating to McAdamized roads, and the necessity of improving highways for the use of animal power, have occasioned much inquiry in respect to the cost and utility of plank roads. These inquiries are especially pertinent in Missouri at the present time. Five McAdamized roads have been projected from the city of Saint Louis, leading in different directions: and, although short sections have been completed on each, yet, it is not too late to change the mode of construction, provided, that, upon a thorough examination of the subject, it should be found to be the interest of the community to do so. Much will depend upon the success of these roads: if they should be completed upon the present plan, and be found unprofitable, they will probably be superseded in a few years by some other mode of improvement, and the investment, in part, be lost to the county. But, should these roads be constructed with plank, and prove to be cheaper and better than stone roads, the result would be the means of encouraging the plank road system throughout the State.

In our leading articles, we have hitherto avoided the discussion of local subjects; but we have been induced to notice this, because, notwithstanding the work is local, yet, it is intimately connected with the general interest of the country; and, for the additional reason that we have received a communication on the subject, from the Hon. O. Williams, one of the Judges of the county court, in which he seems to incline in favor of prosecuting the work according to the original plan. In comparing the merits of stone and plank roads, the Judge says: "if rock and lumber were equally convenient, I would make rock roads; for rock is a living substance: when almost every thing else gives way to time, it is still found solid: neither moth, rust, nor decay is found on it; and a little more of that living substance, applied in due time, keeps the road a living one for centuries. When, every ten or twelve years, the plank road will have to be made anew, which will cost more than the original construction of the rock road; and more than double the cost of keeping the rock road in repair." The cost of roads, whether of rock or plank, must be governed in all cases, in a great measure, by their particular locations; but is susceptible of being estimated with almost perfect accuracy; and, when the quantity and price of the necessary materials and labor are known, there is no difficulty in making the calculation. The communication to which we have referred contains a number of tables, showing the cost of a plank road in St. Louis county. By the table, in which the author estimates the plank at $1 50 per hundred feet, he makes the materials upon the ground cost $5,227 20 for each mile. His road, however, is twenty-two feet wide—this width we do not esteem necessary for any road required in St. Louis county.

A writer in the American Railroad Journal says: "a double plank track will rarely be necessary. No one without experience in the

matter can credit the amount of travel which one track can accommodate. Over a single track near Syracuse, 161,000 teams passed in two years, averaging over 220 teams per day, and during three days 320 passed daily." It is scarcely probable that as large a number of teams would pass over either of our roads, at least for many years to come, and when ever the time arrives that a double track shall be needed, the tolls will soon pay for enlarging the capacity of the road. A plank track eight feet wide is the width which seems to be most approved by those experienced in constructing plank roads in the United States. And without entering into estimates, we conclude that a plank road of this width will cost much less than a stone road in St. Louis county. But the cost of construction is not the only point of view in which the subject should be considered. We have what we esteem good authority for affirming that the same team can haul at least fifty per cent. more on a plank road than upon a common turnpike.

This is an advantage that the projectors of our roads seem not to have taken into consideration, or, sufficiently appreciated. This difference in the cost of transportation would, of itself, be worth more to the city and county of St. Louis than the entire cost of all the five roads. It would impart a value to fire-wood, building materials and other heavy commodities, in distant parts of the county, where they are now worth nothing; and would tend to cheapen and make more certain the supply of fuel in the city. And, besides this, the comfort of traveling upon a plank road is a matter worthy of serious consideration. Our broken limestone is rapidly reduced to an impalpable powder, by the passing of wheels over it: and, rising into the atmosphere in dry weather; it remains suspended over a road that is much traveled, all day, and is considered highly injurious to the lungs of those who breath it. Owing to this cause McAdamized roads will offer little inducement to the people of the city to travel on them for exercise and health; and on this account will be less profitable.

We have been encouraged to make these suggestions by the tenor of Judge Williams' communication, from which we infer that he does not consider it too late to change the plan of constructing our county roads, provided the court should be convinced that the public would be benefited by the change. We trust, therefore, if not indeed too late, that the court will take the subject into consideration, and carefully compare the two modes of improvement before proceeding farther with the work. The simple fact that the people of those States who have had most experience in matters of internal improvement have abandoned the construction of turnpike and adopted plank roads, should, of itself, have great weight upon the minds of those who give direction to our works of improvement.

We feel the fullest assurance that the change we have suggested would meet with the approbation of a large majority of the county; and, were our citizens fully enlightened upon the subject, we should expect to see them urging upon the county court a change of the present plan of improvement, even though nothing should be saved by such a change in the cost of the work.

In another part of the present number will be found a valuable article on the construction and cost of plank roads, which we commend to the perusal and consideration of our readers.

From De Bow's Commercial Review.

ART. II.—THE MANUFACTURE OF SUGAR.

(*Concluded from page* 25.)

PART SECOND OF MR. MELSEN'S NEW METHOD OF EXTRACTING SUGAR FROM CANE AND BEETS, TRANSLATED BY THOMAS G. CLEMSON, UNITED STATES CHARGE D'AFFAIRES AT BRUSSELS.

But, while I was naturally tempted to confine all my attention to sugar-cane, which promised me a success incontestible, quick and easy, I felt that I owed it to my native country which has no colonies and which cultivates the beet on a large scale—and to my master, who, on so many occasions, has aided the cause of native sugar—to endeavor, by every means in my power, to maintain the equilibrium between beet and cane-sugar, which the results I had obtained threatened to overthrow. This is the point I aimed at in my reiterated experiment on the beet.

As the extraction of sugar from the cane requires crushing or grating, defecation, slow or rapid evaporation and filtrations, it is very easy, from this, to form an idea of the evaporations necessary for the beet. There is, in reality, little difference. But, if the sugar-cane offered results so clear that there was no doubt on my mind of the advantages of the process I tried, the beet presented much greater difficulties to be overcome.

Our sugar manufactories are much more advanced and leave much less room for improvements. As the extraction of the juice is more perfect, there is a smaller loss in the pulp. As the pulp is used for the food of cattle, the sugar it contains is not in reality lost. Having coal very cheap, the process of evaporation by fire suits better. Finally, the juice of the beet containing a considerable quantity of salts, which prevent the crystalization of the sugar, there is a cause of loss which the new process cannot correct.

The calculation, in round numbers, appears to be this: a hundred kilogrammes of beets contain, one year with another, ten kilogrammes of sugar, one kilogramme in the pulp, two in the molasses and seven that the manufacturer can sell in the form of unrefined sugar.

Some manufacturers, they say, reach this quantity; but I should be disposed to think, even in France, where this industry is so well understood, the general product does not exceed six kilogrammes; from which there results absolute loss of one per cent. of sugar, which disappears during the operation. However this may be, I consider as the limit of all that is to be hoped from my process for the moment, a yield raised to eight per cent., or one-fourth which would be thirty-three per cent., above the general yield, taking one manufactory with another.

But I have sought less to give the large beet-sugar fabrics more perfect processes of fabrication, than to furnish means which can be easily employed by all, and are capable even of being used on a smaller scale on the farms themselves.

While I was studying the question in this point of view, Messrs. Claes were using, without my knowledge, processes of the same

nature on a large scale. It is for them, consequently, to make known the results. For myself, as I have not yet had the means of judging of the operation of my method with the aparatus actually existing in the sugar manufactories, I can only give the results of my experiments in the laboratory.

First point to be considered. Can all the sugar contained in the beet be extracted? This cannot be doubted.

Washing the pulp with water charged with the bisulphate of lime is an operation entirely in the scope of a manufactory, and. done systematically, will give a liquid very like the juice itself, and containing nearly as much saccharine matter, and leaving the pulp very nearly, if not entirely, exhausted.

The washings thus obtained might be thrown on the grater, to preserve the new pulp from fermenting.

For the exhausted pulp, I am not ignorant that it is considered injured as food for cattle by this extraction of all the saccharine matter. This, experience will decide; but I should be inclined to doubt that this pulp, which, after the washing, is still so rich in azotized and other similar matters, can have lost its alimentary properties. Exhausting the pulp, and afterwards adding to it the molasses which would give it the sugar and the salts it needed, would seem to me a reasonable and logical operation. Experience alone could decide what quantity of molasses could be supported by the cattle.

What I wish to prove, is, that the exhaustion of the pulp is very easy, in itself considered, when a liquid can be used which prevents all alteration and fermentation, and permits as much time as is necessary to be given to the operation.

The absolute loss of one per cent. of beet-sugar, or of ten per cent. of the original saccharine matter, is not, I am convinced, exaggerated. It is, I think, really under the truth, and on this point I do not doubt considerable amelioration may be obtained.

From whence comes this loss if it is not from the scum, in the animal black, and in the filters or from the loss from fermentation? The employment of my process prevents these losses. As to the animal black, its consumption will be much reduced in the refining of common sugar. As to the scum, the bisulphate has a double action, the importance of which I do not think I exaggerate. It determines more easily and more completely the coagulation of the albuminous substances which form the scum; besides which, it produces a scum on which the air has no effect, and which does not ferment. If the operation on a large scale causes difficulties in this respect that I do not perceive, the addition of a few milienes of the bisulphate would suffice to prevent them.

It is plain, that to prevent fermentation in the sacks, filters and instruments employed, it is sufficient to wash them with water charged with the bisulphate before and after using, as Messrs. Durbunfaut & Kuhlman have already devised.

From all this, I concluded that a well-directed use of the bisulphate of lime will enable us to extract the sugar heretofore left in the pulp, and prevent losses by fermentation. If the removal of these two causes of loss or of destruction adds two or three per cent. of sugar

for the ten contained in the beets, the operation is not without interest. I will now speak of another cause of loss. This is the presence of the salts, which are considered as being the principal causes of the formation of molasses. I have observed all the inconveniences that are attributed to the action of the various and abundant salts contained in the beet. With the sugar cane, a small portion of the bisulphite is all that is necessary, for the washings give results as exact as if alcohol had been used. The reason is, that there are little or no salts in cane juice. With beet juice it is another thing.

However this may be, the treatment by the bisulphite always differs from the treatment by alcohol, precisely because the water of the juice dissolves the salts, while the alcohol does not. It is rare that the crystals of beet sugar can be obtained in distinct form, and they are difficult to produce. On the contrary, sugar-cane gives crystals, perfect and easily formed. Therefore, there has generally remained if not molasses, soft sugar in treating beets.

Admitting, however, the incontestible influence of the salts on the crystallization of sugar, I cannot accept it as the only cause of the formation of molasses, or soft crystals. If this was so, in evaporating forty litres of juice and burning the residue, and adding the salts thus obtained to ten litres of juice, this juice ought not to furnish crystalized sugar. Now, it is very easy to ascertain that this quantity of the salts contained in the beet would not have such an influence.

The production of molasses must, then, be attributed to other causes, independent of this. It would, therefore, be inexact to say, that a process which did not destroy the salts must, for that reason, be without influence as regards the formation of molasses. All my experiments prove the contrary. I have never been able entirely to prevent the formation of molasses, but all the manufacturers are convinced that I have reduced it to a much smaller quantity than the operations employed have succeeded in doing. They may, I believe, with confidence, continue their efforts in the same direction.

I have been assured that, in some of the French sugar fabrics, directed by persons of great experience, the yield of sugar has been carried to eight per cent. of the weight of beets (about one fourth). This result confirms fully the opinion at which I had arrived at by my own researches. I shall be happy if I succeed, by the certainty of my process, in enabling all to do what it has, as yet, been in the power of but few to accomplish.

I shall, at present, endeavor to reply to some questions of great importance to large manufacturers. I shall do so with sincerity, leaving operators and men of business to decide what my opinions are worth in that respect.

The manufacture of sugar has taken such a start in certain parts of the continent, that it has given rise to establishments specially devoted to the fabrication of machines used in it, and also for making and restoring the animal black it consumes. There are also distilleries for the consumption of the molasses, from which they extract the salts and the alcohol contained, with profit to the country. All these industries are uneasy.

If the use of bisulphite be adopted, the new conditions which it will introduce may open new vistas to invention, which I cannot fore-

see. It seems to me, however, that graters will be always necessary at least until the effects produced by washing the sliced beets obtained from root cutters shall be more studied. It has even seemed to me, so far, that the juice obtained by macerating or soaking was more easily operated on than the natural juice coming directly from the presses and graters.

I do not dare say, certainly, that the presses actually in use will be preserved, even if the graters are. They are calculated for very rapid operations; but once the juice is rendered unalterable, slow presses, operating on large masses, economizing labor, suppressing the sacks and the racks, may offer certain advantages and obtain a just preference. Defecation, by means of the bisulphite, being carried on in the same manner as when lime is used the boilers for this operation will continue indispensable.

The Taylor filters, or those of the same kind, will be as much needed in the new as the old process, unless it be found practicable to operate by deposit, which is possible.

The apparatus for evaporating by fire might be used in the commencement of the concentrati n of the juice, but toward the end it would be necessary to have recourse either to rapid crytalization by means of boilers heated by steam, or to slow crystalization by means of stoves. I am sure that either sheet-iron, cast-iron, tinned-copper or tinned-iron, and probably reservoirs constructed of wood or bricks covered with cement, may be used.

The use of animal black may be either suppressed, reduced, or continued, according as it may be desired, to manufacture refined or unrefined sugar.

As to the molasses and the salts contained in it they might always be employed, except the portion that was thrown on the pulp for the nourishment of cattle.

Agriculture, in France, requires a quantity of marine salt. It would be much more reasonable to desire salts having potash for base. Now, when it happens that, in a country like the northern depa tment of France, where nothing is lost, and where there is such an abundance of these salts in the molasses, and when it is only necessary to give this to the cattle, in order that these salts should be returned to the earth in the form of manure, it is to be supposed they will soon find reason to cease the exportation of molasses and the salts obtained from it, of which they may be said to rob their land. Countries which produce sugar may export as much of that product as they desire, with impunity. Air and water return the elements, but the salts contained in the molasses, once carried away, are not so easily found again.

To exhaust the pulp of all the crystalizible sugar contained, and return a portion of the molasses with the salts it contains, would be, in my opinion, the most reasonable proceeding, taking into consideration the general economy of the country. But, in order to render this method acceptable to private interest, it is necessary that they should find an immediate profit. To do this, there should be a greater profit in extracting the sugar from the pulp than in selling the molasses.

Pratice, on a large scale, can alone prove whether this advantage exists, as I think it does.

The indications which I have given above will render easy, to every one interested in the different industries connected with the manufacture of sugar, the appreciation of the facts that I have proved myself in the treatment of the beet.

I grated beets, and watered the pulp with two and a half per cent. of the weight of the roots of a solution of the bisulphite of lime. I pressed the pulp and collected the juice which I boiled. I clarified it and passed through a cloth strainer, and analysed it by means of the polarizing apparatus. I concentrated by boiling the clarified juice to the consistence of a syrup, which was filtered and placed in a stove, where it formed crystalized masses of a straw color, and the crystals were also examined by the polarizing apparatus.

The analysis of this humid mass, thus made, enabled me to determine the portion of its weight corresponding with true sugar, the rest being represented by water, salts, &c. Four litres, 356 of juice, containing 521 grs., four of saccharine matter, gave a crystalized mass, containing 528 grs., two of sugar. 0 litre, 984 of juice, containing 105 grs.,3 of saccharine matter, gave a grained mass containing 104 grs., 9 of sugar. One litre, 045 of juice, containing 112 grs., 4 of saccharine matter, gave a grained mass containing 113 grs., one of sugar. By which it is proved that, during the defecation, the first concentration by boiling upon the naked fire, the second concentration in an oven, and the crystalization which was produced the sugar treated by the bisulphite is preserved without loss or alteration.

In all my experiments the same exactitude was manifest. The differences always small, sometimes in one sense, sometimes in another, were not generally more than two or three hundredths, a quantity too small to be appreciated in practice.

The pulp, being steeped in water and pressed a second time, yielded again a sweet liquid: washed again, the liquor was, not perceptibly sweet. A little bisulphite was added for the last washing. These liquids, mixed together and treated as before, yielded crystalised masses exactly similar to the first. The sugar in these masses corresponded in weight with what the analysis gave in the liquids that furnished it.

The scums and the sacks, washed in their turn in water charged with a little bisulphite, furnished, notwithstanding, their exposure to the air, rinsings, which were left for ten days, and all that came from the experiments of each day, was added. At the end of this time it weighed four and a half (Baume). They were treated by defecation, &c., like the beet juice itself, and the result was crystalised masses, almost equal to those obtained directly from the beet.

During the long time that I was engaged in making these experiments, I treated beets of all sizes and colors: red, yellow, white—of every age, young and not arrived at maturity, decayed, as well as those that were perfectly sound. In every case, the crystalised mass that I extracted contained the sugar, unaltered, that previous analysis had indicated. The differences observed were to be attributed principally to physical causes, for the sugar obtained did not always present the same aspect. Beets rarely gave as fine products as sugar-

cane. Instead of a firm and well-formed grain, the solidified masses had confused crystalization.

Chemists and manufacturers, who are accustomed to manipulating, the excellent method of assaying given by Mr. Payen, may convince themselves by a very simple experiment. They have only to treat a dozen beets by the bisulphite, and evaporate the juice after defecation, first to 25 ° of Baume. At this point clarify and filter, or even filter without clarification; evaporate afterward to 37 ° or 38 ° of Baume, and leave it for three or four days in an oven, at forty centigrade. The crystalized mass, well pressed, will give an unrefined sugar of a fine color, and of a richness in sugar not only theoretically but practically realizable (as the assay by Mr. Payen's method indicates), which will surpass the yield of all the operations of sugar manufacturers.

But whoever tries to treat beets by the bisulphite, will soon discover that there may be extracted from the juice they yield, from thirteen to fifteen per cent of the weight of this juice, of a thick residuum, which, well pressed between folds of filtering paper, leaves from seven to ten per cent. for the weight of juice of white sugar.

After having been present at the first of my experiments, which took place before the French committee, Mr. Clerget, one of its members, in his first experiment made with my process, arrived at the same result.

The syrup boils up very rapidly when the bisulphite is used, but this inconvenience may be easily remedied by employing a little grease; or, what is better, oleic acid. I was not able to account for this fact. It would seem that this phenomenon required that another form should be given to the vessels used for evaporating the juice, especially when it came from unripe beets.

I found that my process enabled me to extract sugar from defective and decayed beets as well as from those that were sound. The product differed little in appearance, and the quantity indicated in the beets was found entire in the crystalised masses obtained.

In comparing the well known practice of the fabrics of beet sugar now in operation, with what seemed to be the results of my process, I perceived the following circumstances: The grating of the pulp is done at present in the open air, without any special precaution. The alterations to which this gives rise render a rapid pression indispensable; but, however rapid this may be, it cannot entirely obviate the difficulty. The defecation by means of lime, does not prevent, but even increases, the discoloration, and renders the employment of animal black necessary as a bleaching agent, and an absorbent of the excess of lime. Evaporation at a high temperature, modifies a part of the sugar, which heat renders uncrystalizable, from which results the necessity of operating by several successive boilings, and the solid sugar is extracted in four or five crystalizations, less and less productive.

By my process the beets may be grated some time in advance, and the pulp of the day before may be slowly pressed several times, and exhausted by washing. The defecation leaving the juice limped and colorless, renders the employment of animal black useless.

The juice evaporated first at an elevated temperature, to the density of about 1.3, then concentrated in an oven, crystalizes without

color, and solidifies almost entirely, which gives almost the entire product in the first operation.

I was, therefore, always brought back to the employment of the process of slow crystalization, to which Mr. Crespel-Delisse owed the success which saved from ruin, the fabrication of indigenous sugar in France in 1827. In adopting it I felt sure, that, by the employment of the bisulphite, this process had become much more simple and easy, and that the yield would be much more increased.

I was stopped by my two difficulties :

Would cattle eat the pulp treated by the bisulphite, and would it not be injurious ?

Would the purified sugar offer any special difficulty in refining, or prevent any cause of depreciation in the consumption ?

It was not possible to decide this question in the laboratory. It requires the manufactory on a large scale, to arrive at certainty.

I had arrived at this point, when Mr. Paul Claes, manufacturer of beet sugar at Lembecq, came to Paris, as one of the committee charged with a special mission by the Minister of the Interior of Belgium to give an account of the results of my researches. He commenced by telling me, with his well-known frankness, that he had himself tried a process that was probably analagous to mine, but that, in case of coincidence, he acknowledged that by the deposit of two sealed packets made by me in the archives of the Royal Academy, of Belgium and the French Institute, assured my priority.

He gave me in writing the results of his operations in the following terms :

We treated at Lembecq, by sulphurous acid, nearly 2,500,000 kilogrammes of beets, in the last year.

The liquid sulphurous acid at 4 1-2 Baume, diluted with two hundred times its volume of water, was poured upon the grater.

The beet juice was clarified by lime at about 60°. Chalk was added ; very large lumps were obtained. The clarified juice was almost without color. During the whole operation no discoloration was discovered that could not be traced to extraneous causes.

The quantity of sugar extracted was greater than usual. The color, without claying, finer ; the grain finer and richer. This sugar, resembling in every respect, the finest sugars made, was most favorably received in commerce. Some time afterward Messrs. Claes and brothers, sent me the fourth products refined and the fifth unrefined, which fully justified the preceding assertions.

My joy was great, I avow, in learning, on one hand that sugar treated with sulphurous acid could be easily refined, and offered no difficulty to consumption, and to know that the pulp of 2,500,000 beets, treated with sulphurous acid, had been eaten by cattle without difficulty.

The question of the yield, in comparison with what it had been before in each fabric, yet remained to be decided. It was sufficient for this, that I found it had been increased at Lembecq by the use of sulphurous acid.

Mr. Paul Claes thought, with me, that the direct use of bisulphite of lime was preferable to that of sulphurous acid.

Up to this time, my researches had been pursued in the calm of the laboratory, but one cannot touch with impunity questions connected with great interests.

The results of my experiments had transpired. The manufacturers of the Northern Department of France became uneasy. The Colonial Delegates addressed themselves to the Minister of the Marine in France; and, at their request, the French Government named a commission for the examination of my process. The silence so long guarded by the Belgian Government was necessarily, broken.

In its first sitting, the French Commission decided that it was necessary for the security of my operation that I should have a patent. I immediately took out one, as a means of preventing individuals from paralyzing my efforts and those of the government. We wished the French and Belgian manufacturers to enjoy the advantages of my process.

To judge of the value of a new system, in a fabrication like that of sugar, it is necessary to make a series of experiments at different epochs on a sufficiently extended scale.

I publish at present, therefore, this first memoir, in which I have sought to establish, precisely, the essential facts; and I entreat all the French and Belgian manufacturers, who think it comports with their interests, to make, during the year, a series of experiments, either on the cane or on the beet, making what use they please of the processes which they find described here. I shall be pleased to receive their communications. What I seek is the truth. When my experiments have been verified as I desire, all the world shall have the proof.

I wish to insist on one point. The bisulphite, poured upon the grater during the first operations of manufacturing, renders the juice unchangeable. It permits the maceration of the pulp, and its second pressure after having steeped it in water. It corrects the bad condition of the beets toward the end of the season and renders the fabrication uniform and regular. Let it be essayed in these conditions, in confining its employment to that of a preservative. The capabilities of the manufacturers and the workmen will do the rest. This new process will become gradually familiar, and it will be easier to seize the most favorable conditions for its employment.

If, contrary to my supposition, the manufacturers of native sugar and no profit in the employment of my process, I shall not for that reason believe that no further benefit can be derived from it in our climate. When all that is necessary to extract easily from a thousand kilogrammes of beets and to produce finer and whiter unrefined sugar than that now supplied is a root-cutter, one or two barrels, and a boiler, such as is used in washing, with a few earthen vessels, is it not to be hoped that the always increasing consumption of sugar will render popular its fabrication throughout the country, and bring in its train all the benefits of the culture of the beet. Thus the wish of Morel Vinde may be soon fulfilled.

At the same time, agriculture will gain one of the greatest fertilizers and the laborer the consumption of a healthy article of food, at present unknown to him. For, while England consumes more than ten kilogrammes of sugar per head in the year, the whole of the rest of Europe does not consume more than two and a half kilogrammes per person in the same time.

Whatever may be the method of operating on a large scale, I cannot sufficiently dwell on the importance of the application of the preserv-

ing bisulphite to the juice the moment it comes in contact with the air.

For the rest, it is easy to understand that, taking the facts and principles I have given as a base, those employed in manufacturing may put them in practice in various forms. Hereafter I will publish the comparative results of the essays I hope to be able to continue. I will confine myself to indicating here some of these forms.

1st. Defecate the pulp itself.

2d. Defecate the juice from the presses, or from the washings, by means of the bisulphite of lime alone. Filter, through Taylor's filters, and draw off clear after the defecation. Boil directly this limpid solution, notwithstanding it becomes troubled during the concentration.

3d. Defecate by the bisulphite of lime; filter or draw off; evaporate to 25 ° Baume; filter; carry the concentration no further than about 38 Baume. Crystalize slowly in an oven, by the method of Mr. Crespel-Delisse.

5th. Put on the pulp a weak dose of bisulphite to preserve it; defecate in the ordinary manner by lime; filter, or use animal black; add bisulphite sufficient to obtain a neutral or slightly acid liquid; evaporate to 25 ° Baume; filter and boil.

In all these cases good results would be obtained by returning the syrup that runs off to the boilers for defecation, but it must be understood that this operation cannot be repeated more than a few times.

6th. Defecate by the bisulphite; filter or draw off; concentrate the juice to about 25 ° Baume; neutralize it, or render it slightly alkaline; make use of animal black, and afterward proceed by the old methods.

7th. Pour upon the grater a weak solution of the bisulphite; defecate with lime: operate afterward in the usual manner.

Before finishing, permit me to recall, in a few words, the experiments of learned men, or practical manufacturers, who have preceded me in the work I am engaged in.

We have all taken our point of departure from Proust, whose name will always be honorably connected with the history of sugar.

Independent of the well-known use he made of the change operated by the sulphite of lime for the extraction of grape sugar, this illustrious chemist indicates, in the Journal of Physic for 1810, the application of sulphite of lime for the juice of the cane, the maple, &c. It is to him, then, that is due all the honor of the discovery. Sooner or later his opinion must triumph. My happiness will be to have disengaged it from some difficulties, and to cause it to be accepted in practice.

Some experiments followed this indication. Mr. Drapier, in 1811, employed sulphurous acid. Mr. Peppre failed in 1815, in his essays with the same acid.

Mr. Jordan de Haber recommends the use of sulphurous acid for clarifying, but he employs, without distinction, sulphurous and sulphuric acids of lime.

Mr. Boulin took a patent for the employment of sulphite of alumine in 1846. The use of this salt had been already indicated by Mr. Stolle, in a patent taken in 1838.

Mr. Merge took out a patent for the use of sulphurous acid and the sulphuret of calcium, which had been already proposed by Mariet de Reins for grape sugar.

In this rapid enumertion I purposely omit two patents, which give a full description of the employment of sulphurous acid and the sulphites—one by Mr. Dubrunfant, dated 1829; the other by Mr. Stolle, dated 1838.

No one will suppose, I am sure, that I had the intention of setting aside the experiments of a person so worthy of consideration as Mr. Dubrunfant. One thing astonishes me, which is, that his penetration did not enable him to discover the reason of the failure of several of his processes.

The patent of Mr. Dubrunfant is printed in volume twenty-seven, of the collection of expired patents. Instead of discussing it, I refer the reader to the patent itself.

The patent of Mr. Stolle is printed in the collection of expired patents, volume sixty-seven. Manufacturers and chemists will appreciate at once where Mr. Stolle and I differ. They will give their just value to the points we start from, and will see upon what facts we base our theories.

For the rest, far be it from my thoughts to give myself the credit of the application of the principle of change to cane and beet sugar. I acknowledge that the credit of all belongs to Proust, and that we have only followed him. There remained something to be done to render practical the happy and original idea of this great chemist in the manufacture of cane sugar, as well as that of the beet. If I have succeeded in this, I am willing all the honor should be given to Proust.

NOTE —The translator is not only struck with the importance of the above discovereies with reference to the cane and beet, but cannot help thinking that they may be applied with success to the extraction of sugar from the stalk of the Indian corn. T. G. C.

ART. III.—OSAGE RIVER.*

To the Editors of the Western Journal:

You are aware that a Board of Internal Improvement was established by authority of the Legislature of Missouri in 1839, and that during its existence examinations and surveys were made of the

*We are indebted to Thomas Allen, Esq., for the following extract from the Report of the Board of Internal Improvement of Missouri. It is the more acceptable at the present time, for the reason that it contains many interesting facts relating to that portion of our State bordering upon the route of the Pacific Railway. We entertain the opinion that the commerce and travel between the valley of the Osage and St. Louis will, of itself, be sufficient, in time to pay fair dividends on the investment necessary to construct the road to that region. And when we contemplate the extent of country situate West and South of this line of road—all of which must look to St. Louis as its principal market—we feel fully persuaded that no route on the continent offers stronger inducements for the investment of capital. EDITORS.

Osage, the Meramac, the North Grand, and the Salt rivers, of this State, and a route for a railroad was located from this city to the Iron mountain. A report was made to the Legislature in 1840 by this board, embracing the results of these examinations, accompanied with plans for and estimates of the cost of the improvements of these streams, and of the construction of the railroad to the Iron mountain. This report, though printed by the State, and of considerable interest, seems to be but little known at the present day, and very few copies of it are to be found. There are portions of it, which, for more general information, for convenient reference, and as especially relating to parts of the State lying in or near the projected route of the Pacific railroad, I herewith transmit to you for republication in your valuable Journal. These portions, to which I allude, relate to the Osage river, the Meramac river, and to the Iron mountain railroad. And firstly, I ask you to republish the following extracts from the portion on the

OSAGE RIVER.

The point at which the survey of this river was commenced, at the town of Osceola, is about two miles below the mouth of the Sac, a tributary which has its source near the southern limit of this State, and which, at its confluence with the Osage, is of the same apparent size as that stream. The Osage proper has its source far beyond the boundary of this State, in a direction westwardly from the point where it receives the Sac. The extent of country drained by the Sac is 2052 square miles, and of that by the Osage fork, is 1332 square miles within the State, besides a vast country of undefined extent beyond its western borders. The main swell of these two streams is rarely coincident. The Sac rising far in the south, contributes its succession of waters, at the breaking up of winter, in advance of the rise, on the western fork, and, during the other wet seasons of the year, the great extent of country drained by these streams, and the remote points in which they have their source, preserves to the river, below their confluence, for a long period a nearly uniform quantity of water. The most important tributaries that afterwards unite with the Osage, are the Pomme de Terre, and Grand rivers above the town of Warsaw, and the Niangua, sixty-four miles below it. These tributaries, though large, do not appear to add much to the permanent volume of the stream; they do indeed, by local rains, occasionally produce a rise, which soon subsides, their chief utility consisting in replacing the waste of the river from evaporation and filtration. To this purpose, the Niangua is admirably adapted, its main supply being a few large springs, which gush out in perennial rivers.

The right bank of the river Osceola, is limestone rock—the left alluvial bottom, both reach above high water, and their steepness is such as to occasion but little variation in the surface width of the river during its various fluctuation. This width, where the survey was commenced, and when the river was stated to be at its ordinary stage, was 317 feet, and the depth 7.7 feet, with a current moving at the rate of about two miles per hour. This characteristic of alluvial bottoms on one side, and rocks and bluffs on the other, is preserved, with few exceptions, to the mouth of the river.

The bottoms are narrow, generally elevated above high water, and are composed of sand, gravel and alluminous matter, combined in such a manner as to form banks of such permanency as, in most cases, effectually to resist the action of the river. The rocky banks with which these bottoms alternate, and which occassionally rise into perpendicular bluffs of from 50 to 250 feet elevation, are of the tertiary formation of Bakewell, and are generally silicious limestone with occasionally large masses of sandstone; and the deposits which are brought into the river by its tributaries, are detritus from these rocks, with small angular fragments of silicious rocks which abound upon the ridges of the interior and which are also more or less intermixed with the soil of the prairies. These deposits whether brought into the river by its tributaries, or derived from the abrasion of its banks, appear to be very stationary, the force of the current of the river not being sufficient to put them in motion after they have once subsided in it. The obstruction to the navigation of the river consist of shoals formed by this description of material, which give to the bed of the river where they occur, great stability, and force it at high water to widen its channel by encroachments upon its alluvial banks, the coarser and heavier particles of which are added to the shoals already in existence, while the lighter ones are deposited where the water is less rapid and accumulate into islands by which the water in the river becomes temporarily divided. At these points in low water, the greater part of the whole fall in the river is accumulated, thus dividing it into a succession of pools and rapids. The river in these pools has a depth of from three to twelve and fifteen feet, with a current scarcely perceptible; while at the shoals, it is either spread out in a thin sheet of great rapidity, or divided by the Islands, so as to afford in neither channel sufficient water for the purpose of navigation. In addition to shoals of this description there is an obstruction known as the Rock rapids, where there is a fall of 1.63 feet in a distance of 200 yards, with a minimum depth of water of 3.3 feet. The difficulty here does not consist so much in the shallowness of the river as in the rapidity of the current and the agitation of the water occasioned by masses of detached rock distributed through the channel. As the mouth of the river is approached, the character of the bottom land, and of the deposits, is also changed to some extent, there being more alluminous matter and less gravel entering into this formation. Owing to the general stability of the banks, the obstructions from snags are not numerous; but, at a few points where this stability is wanting, the undermining of the river has occasioned a considerable accumulation of them. These will have to be removed; and to prevent further encroachments of the river, the banks must be protected by rock. The overhanging trees that have necessarily to be cut, are few; and should the plan proposed for the improvement of the river be executed, they will all be wanted in the prosecution of that work.

DIVISION 1.

Number of shoals between Osceola and Warsaw, -	25
Aggregate length of do. - - - - - -	10,500 yards.
" fall " do. - - - - -	27,51 feet.
Total " between do. and do. - - -	54,13 do.
" distance " do. and do. - -	58 miles 1000 yards.

DIVISION 2.

Number of shoals between Warsaw and mouth of Niangua,	30
Aggregate length of do. - - - - -	14,200 yards.
" fall " do. - - - - - -	33,42 feet.
Total " between do. and do. - - - -	49,61 do.
" distance " do. and do. - -	63 miles 1000 yards.

DIVISION 3.

Number of shoals between Niangua river and mouth of Osage,	43
Aggregate length of do. - - - -	19,350 yards.
" fall " do. - - - -	47,75 feet.
Total fall between do. and do. - - -	58,42 do.
" distance " do. and do. - -	108 miles 621 yards.

Minimum volume of water per minute, 131,000 cubic feet. Maximum range of river from high to low water, according to freshet in 1837, 27 feet, do. do. during survey in 1840, 22 feet.

The extent of territory, within this State, that will be directly benefited by this improvement cannot be less than 18,000 square miles, a large portion of which is prairie of good quality, the more westwardly part being represented as unusually productive, as is also the valley of every water course throughout its whole extent. The eastern section, or that nearest the mouth of the Osage, is generally covered with timber its surface is very irregular, and with the exception of the narrow bottom lands of the river and its numerous tributaries, is but illy adapted to agricultural purposes. For this deficiency in agricultural capability, there is, however, an abundant recompense in the very general diffusion of ores of lead, in the richness of the bottom lands, and the extended range for stock which those parts too rugged for cultivation will always furnish.

The inducements which the variety and excellence of this section of country hold out to industry and enterprise, have drawn to it a large portion of the emigration that has come to this State, within the last few years; and the home demand for articles of agricultural production, consequent upon this emigration, together with the difficulties and privations to which the pioneer is always subjected, have, in a great degree, prevented him from turning his attention to the immense hindrance to his prosperity, that exists in the heavy charge and expenses to which every article requiring transportation is subject. His salt and his iron, articles of indispensable necessity, and those other heavy articles of sugar and coffee, which, to an American farmer, are, from habit, of almost equal necessity, come to him so much enhanced in value by the cost of transportation, as to absorb the products of his industry, diminished as they are in exchangeable value by the same cause. This expense of transportation is as essential an element in the consideration of the value of lands, as the quality of the soil; and it becomes important to enquire more particularly into what, in this respect, is the present condition of this region. In doing this, it will be placed in as favorable a point of view as its true position will warrant, by assuming Warsaw as the central point at which its exchanges of product for supplies are effected. This town is situated on the Osage, one hundred and seventy-two miles above its mouth, and seventy-five miles from Boonville, which is the nearest shipping port upon the Missouri. The distance from

the mouth of the Osage to Boonville is, by the river, about seventy miles; but the charge for freight from St. Louis to either point is about the same. The cost of transportation from Boonville to Warsaw per hundred pounds, is one dollar. From the mouth of the Osage to the same point by the improved navigation, it will probably not exceed an average of forty cents—resulting in a saving per hundred of sixty cents.

By the census of this year it is ascertained that the white inhabitants of the district of country that would in all probability get their supplies by this improvement, amounts to sixty-four thousand; and assuming six of these to be a family, the number of families will be ten thousand six hundred and sixty-six. Suppose that each of these families consume, for all purposes, fourteen bushels of salt of fifty lb. each, the whole present annual consumption of this article, amounts to one hundred and forty-nine thousand three hundred and twenty-four bushels, or seventy-four thousand six hundred and sixty-two hundred, which at sixty cents per hundred, is $44,797 20. In addition to this, estimates made by gentlemen of great intelligence, and who have ample means of arriving at correct conclusions, as to the consumption in this section, of other articles of importation, place this amount at twenty million pounds, or two hundred thousand hundred weight which, at the difference of sixty cents per hundred, makes an additional tax per annum of one hundred and twenty thousand dollars —the whole amounting to $164,797 20.

At the same time, the exchangeable value of the products of the country, is, from the same cause, diminished to a like extent, or at least $164,797 20, making a total annual loss of $329,594 40, which sum is equal to the annual interest at six per cent. upon an investment of $5,493,236 66. Thus showing that to this extent, at least, the present wealth of the State would be advanced by the expenditure of a little more than two hundred thousand dollars. But when in addition to this, attention is called to the extent of the country to be benefited —to its great agricultural capabilities—to its mineral wealth—to the immense population it is capable of sustaining—it appears to be not only the interest, but the duty of the State, to make such improvements as shall place the people of this great division of its territory as nearly on an equality with the rest of the citizens, as its resources and the nature of the country will permit.

ART. IV.—PLANK ROADS.*

Plan and Cross Section of a Plank Road.

The most valuable improvement since McAdam's, and one superior to his in many localities, is the recent invention of covering roads with planks. Plank roads were introduced in Canada by the governor general, Lord Sydenham, who had seen their utility in Russia. In 1834, the first one was there constructed, (leading from Toronto eastward), and since then five hundred miles of them have been there built. In the United States, the one from Syracuse to Central Square, New York, led the way, being finished in July, 1846; and its great success has already caused the construction of four or five hundred miles in this State, and the projection of twice as many more in it, and in New Jersey, Ohio, Michigan, Wisconsin, etc.

In the most generally improved system, two parallel rows of small sticks of timber (called indifferently *sleepers*, *stringers or sills*) are imbedded in the road three or four feet apart. Planks, eight feet long and three or four inches thick, are laid upon these sticks, across them, at right angles to their direction. A side track of earth to turn out upon, is carefully graded. Deep ditches are dug on each side, to ensure perfect drainage; and thus is formed a plank road.

The benefits of covering the earth with some better material, and the peculiar advantages of this plank covering will be more fully made known, when we shall have discussed in order the various details of construction.†

LAYING THEM OUT.

The waste of labor caused by unnecessary ascents in a road, has already been pointed out. It was also shown that it is profitable to the traveler to go two or three thousand feet around to avoid ascending a hill a hundred feet high; though the cost of constructing the additional length of road *partially* counterbalances this consideration. It was also

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*The following article on plank roads, is a portion of a treatise "on the construction of roads," which has been continued in several late numbers of the American Railroad Journal. It contains all that a practical individual could reasonably desire to know in respect to the construction, but affords no information as to the business capacity of plank roads in comparison of turnpikes. We infer however, from tables found in a preceding part of the treatise that the same team can draw at least fifty per cent more on a plank, than on a common road of broken stone. We have been informed by an individual acquainted with the operations of the Chicago plank road that two horses haul on it two tons, and four horses from four to five tons with ease, and that teams travel with much greater speed on plank than on common roads. Editors.

†Hon. Philo White's report to the Council of Wisconsin, February 1848, embodies a very extended and systematic collection of information on this subject. To it, and to the valuable published and obliging private communications of Hon. Geo Geddes, C. E, (who first introduced and naturalized this improvement in the United States) the author is much indebted, as also to many other recent sources.

proved that the smoother the surface of the road was made, the more injurious proportionally were such ascents. They are, therefore, especially objectionable on plank roads which hold an intermediate place between common roads and railroads. Some distinguished engineers have been led astray on this point. Their arguments, if carried to their full extent, would lead to the construction of railroads also with similar steep grades. It is true, as they state, that a given load can be drawn up a much steeper hill on a plank road than on a common one, the friction on the former being so much less, but this will lessen in an equally increased ratio, the advantages of the level portions of the road. Let us assume the resistance of friction, or "sticktion," (as Professor Whewell calls it,) on a plank road to be one-third of that on a good earth road. It will, therefore, be one-sixtieth of the weight carried, if that of the earth be one-twentieth. If, now, a horse can draw one ton on a level earth road, the total resistance will be doubled when he comes to a hill which rises one foot in going twenty, (1 in 20,) and he will be only able to draw half a ton up this hill, and, therefore, his load on the level parts of the road would be but half a ton; for it would be useless for him to take more *to* the hill than he could drag *up* it. Now, suppose the same road to be planked, and this hill to remain untouched. On the level portions the same horse can now draw *three* tons by our hypothesis. But the hill, rising 1 in 20, will offer a resistance three times as great as does the "striction" of the plank road, and the whole resistance in going up it, will, therefore, be *four times* as great on a level. The horse can, therefore, draw only one-fourth of his former load, or only three quarters of a ton, which is, consequently, the limit of his load on the level. Thus then, this hill has brought down the *gain* of the plank road over the earth, to only a quarter of a ton, instead of two tons, which it would be were the hill removed. Therefore, in laying out a plank road, it is indispensable, in order to secure all the benefits which can be derived from it, to avoid or cut down all steep ascents.

A very *short* rise, of even considerable steepness, may, however, be allowed to remain, to save expense; since a horse can, for a short time, put forth extra exertion to overcome such an increased resistance; and the danger of slipping is avoided by descending upon the earthen track.

A plank road lately laid out, under the supervision of Mr. Geddes, between Cazenovia and Chittenango, New York, is an excellent exemplication of the true principles of roadmaking. Both these villages are situated on the "Chittenango creek," the former being eight hundred feet higher than the latter. The most level common road between these villages rises more than 1200 feet in going from Chittenango to Cazenovia, and rises more than four hundred feet in going from Cazenovia to Chittenango, in spite of this latter place being eight hundred feet lower. It thus adds one-half to the ascent and labor, going in one direction, and in the other direction it goes up hill half the height, which should have been a continuous descent. The line of the *plank road*, however, by following the creek, (crossing it five times,) ascends only the necessary eight hundred feet in one direction, and has no ascents in the other, with two or three trifling exceptions of a few feet in all, admitted in order to save expense. There is a

nearly perpendicular fall in the creek of one hundred and forty feet. To overcome this, it was necessary to commence far below the falls, to climb up the steep hill-side, following up the sides of the lateral ravines, until they were narrow enough to bridge, and then turning and following back the opposite sides till the main valley was again reached. The *extreme* rise is at the rate of one foot to the rod, (1 in 16 1-2;) and this only for short distances, and in only three instances, with a much less grade, or level, intervening. The line passes through a dense forest, which supplied its material, being cut into plank by saw-mills erected in a gulf never before approached by a wheeled carriage.

WIDTH.

A single track of plank, eight feet wide, with an earthen turn-out track beside it, of twelve feet, will, in almost all cases, be sufficient. This gives twenty feet for the least width necessary between the inside top lines of the ditches, the width of which is to be added, making about two rods on level ground. If extra cuttings or filling be required, the width occupied by their slopes must be added to this. An earthen road of eight feet wide on each side of the plank track, has sometimes been adopted. The New York general plank road law fixed four rods, (66 feet) as the least permissible width that plank roads may be laid out. This provision has since been repealed.

Wider plank tracks were at first employed. In Canada *single* tracks were made from nine to twelve feet wide. But it was found on the 12-feet Toronto road, after seven years' use, that the planks were worn only in the middle seven or eight feet, and that the remaining four or five feet of the surface had not even lost the marks of the saw. One-third of the planking was, therefore, useless, and one-third of the expenditure wasted.

A *double* plank track will rarely be necessary. No one without experience in the matter, can credit the amount of travel which one such track can accommodate. Over a single track near Syracuse, one hundred and sixty-one thousand teams passed in two years, averaging over two hundred and twenty teams per day, and during three days seven hundred and twenty passed daily. The earthen turn-out track must, however, be kept in good order, and this is easy, if it slope off properly to the ditch, for it is not cut with any continuous length-wise ruts, but is only passed over by the wheels of the wagons which turn off from the track, and return to it. They thus move in curves, which would very rarely exactly hit each other, and this travel being spread nearly uniformly over the earth, tends to keep it in shape rather than disturb it.

If, however, there is so much travel that the earth track will not remain in good order, then this travel will pay for the double track which it requires. But this should be made in *two separate eight-feet tracks*, and not in one wide one of sixteen or twenty-four feet, as was at first the practice. On a wide track the travel will generally be near its middle, and will thus wear out the planks very unequally, besides depressing them in the centre, and making the ends spring up, and when it passes near one end that will tilt up, and loosen the

other. Besides, when a light vehicle wishes to pass a loaded one moving in the centre, as it naturally will, the former will be greatly delayed in waiting for the other to turn aside, or else will have one wheel crowded off into the ditch. But where there are two separate tracks the whole width of one is at the service of the light vehicle. On a sixteen feet track near Toronto, the planks having become loose and unsettled, were sawn in two in the centre, and this imperfect double track, even without any turn-out path between, worked better than its original state. An experienced constructor states, that if he were desired to build a road fifty feet wide, he would make it in separate eight feet tracks.

A wide track of sixteen feet plank has sometimes been divided into two of eight feet, by spiking down scantling twenty feet long, and six inches square, along the middle of the road, at intervals of one hundred feet in the clear between each scantling. This, however, only partially remedies the objections adduced.

When the ground is of such a very unsettled and yielding nature, such as loose sand, marsh &c., that a solid turn-out track of earth cannot be made, planks, sixteen feet long, may be used, resting on three, four, or five sleepers, crowning in the middle three or four inches, and the ends sprung down, and pinned to the outer sleepers.

GRADING.

The importance of elevating a road bed above the level of the adjoining fields, and digging deep ditches on each side, has been already urged, and this is a fundamental requisite in making a good plank road. Employ the earth from the ditches, if good material, rejecting the sods, to raise the road bed. Give the ditches free outlets, cut their bottoms with true slopes, make under drains, of cobble stones and brush, across the road in wet places, and use every precaution to ensure thorough and complete drainage. This will be more difficult in a flat than in a hilly country. If it be effected, however, the plank will last much longer, and the road be always in better condition.*

The "cross-section" of the road bed, or its shape crosswise, between the ditches, must be carefully adjusted so as to freely carry off the rain which may fall on it. First decide on which side of the road the plank track is to be laid. It should generally be on the right hand side coming from the country into a town, so that the farmer's wagons may keep upon it when they bring in their heavy produce, and that the turning out may be done by those which are going back light.† The twelve feet width intended for the earth track should be heavily rolled or beaten, to make it firm and hard. It should slope

*The ditches and side slopes of the road bed, after being ploughed up, may be most rapidly shaped by the use of a scraper composed of two planks hinged together in front, and kept apart in the rear by an adjustable cross-piece. The team is attached to the outer plank at such a distance from the point as to keep the inner plank in the direction of the road, so that it forms the straight edge of the bank, while the skew of the outer plank throws the earth to one side in the manner of a snow plough. A man with a long lever inserted in the outer side, regulates this most exactly.

†But, in ascending a long hill in either direction, it shou'd be on the right hand side.

down from the centre three-quarters of an inch to the foot, (1 in 16,) and the eight feet of plank should fall off three inches, or 1 in 32. From each side of the 20 feet thus graded, the bank should slope down to the bottom of the ditches at the rate of three inches to the foot, or 1 in 4.

The proper shape may be most easily and accurately given by the use of a common masons level, having a tapering piece of wood under it, or having one leg so much longer than the other, as will give the slope required. If the plank be laid on an old railway, no more of it should be broken up than is absolutely necessary for imbedding the sleepers, as it is very desirable to preserve as solid a foundation as possible.

SLEEPERS, SILLS, OR STRINGERS.

Material.—Pine, hemlock, tamarack, oak and walnut have been used in Canada. Hemlock has been mostly used in New York, from its abundance and cheapness. Pine would be more durable.

Number and Size.—At first, five or six, each six inches square, were placed under 16 feet plank. The Canada board of works, specification, 1845, directs four to be put under a 16-feet road, and 3 under a 10-feet road; the outer ones to be 5 inches square and the inner ones to be six inches wide, and two inches thick, laid flatwise. On the New York roads of eight feet planks, two sleepers, four inches square, have been generally employed. They have, however, been found insufficient, and the experienced engineer of the original Syracuse road, strongly recommends sleepers 12 by 3, laid on their flat sides, and for an important road would make them 12 by 4, or 12 by 6.* They should be large and strong enough to hold up the plank road in case of a soft place for a few feet. Others argue, however, that they should be small enough to sink down with the earth as it settles under the planks, so that these may continue to bear upon the ground; as otherwise the planks would be rapidly worn out by the springing thus caused, and would soon be rotted by the confined air under them. They also assert that the only use of the sleepeers is to keep the road in shape when first laid down. Indeed, a road three miles long has been laid in Canada, without any sleepers at all under the planks, and it worked quite well. Its advocates say that sleepers form a trench in which water collects, and is by them prevented from running off. It therefore floats the planks, or washes out mud from under them, and thus forms a cavity, which produces the bad effects above mentioned. This consideration would make light sleepers appear to be worse than none. The conclusion seems to be that large sleepers should be used for an important road; and that for a poor one, which expects to receive only light loads, and which runs over a hard bottom, sleepers might perhaps be altogether dispensed with.

Length.—The sleepers used should be as straight and true as possible. On the Syracuse road none less than 14 feet long were admitted. On the Canada roads they are required to be not less than 16 feet, nor more than 20 feet long.

*The lower sleeper may be fourteen inches wide, and the other ten, as the former acts as bridge over the channels made under it to let off the water.

Laying.—Their distance apart, centre to centre, should be such that the wheels of loaded wagons may pass directly over their middle or somewhat nearer to their outer than their inner sides. This distance will, therefore, vary in different sections of the country according to the usual "track" of wagons.* If this principle be varied from, it should be by bringing the sleepers nearer the middle than the ends of the plank, to prevent any depression in the centre. The foot wide sleepers in the figure are drawn three feet apart in the clear, or four feet centre to centre.

They should be well bedded in the earth, in trenches cut to receive them, with their top surface barely in sight. They should bear firmly and evenly throughout their whole length, and the earth between them be well rammed down, and made firm, solid, and even.† The sleeper nearer the ditch is to be laid so much lower than the inner one, as to give the proper slope to the road, which is so important for carrying off the rainwater.

Joints.—At the joints, where two sleepers come together, end to end, they are liable to sink under passing loads. To prevent this, various means may be employed. The broad sleepers (12 by 3) may be sawn in two lengthwise, so as to be each 6 by 3, and laid side by side, so as to "break joints;" the joints of one set being opposite the middle of the adjoining pieces with which is formed the other set. The sawmills charge no more for the sleepers in two pieces, each 6 by 3, than in one 12 by 3. A second remedy is to lay a short board under the joints of the sleepers. A third is to connect the ends by a mortise and tenon two inches long. A fourth is to unite them by a bevel scarfing, three inches in length, these to be reversed on each half, in which, for distinctness, the two sleepers are represented as separated. In every case the joint on one side of the road ought to be opposite the middle of the sleeper on the other side.

PLANK.

Material.—In Canada, pine, hemlock, tamarack, oak and walnut, have been employed. In this State, hemlock alone has been used, being the cheapest material to be obtained. Its defects are its perishable nature and its numerous knots, which soon make the road rough, when the softer portions of the plank have worn away. Pine, oak, maple or beech would be preferable. In Wisconsin, &c., white and burr oak are abundant, and would, therefore, be advantageously used. Oak would make the most permanent road from its superior capabilities in resisting both wear and decay. From its greater weight it would cost a little more for hauling and handling. The slipperiness of hard wood has been made an objection to it, but the sand with which the road should be covered would obviate this. Whatever sort

* The common track of wagons measured "from inside to on side," which is the same as from centre to centre, is four feet eight inches in the State of New York. In New Jersey and the Southern States, it is five feet. In Connecticut it varies from three feet eight inches, for light wagons, to five feet two inches for heavy ones. In Wisconsin it is five feet four inches

†A wooden roller, weighing two tons, has been very successfully used for settling the sleepers and the earth between them, being drawn over them several times before they are planked.

of timber is employed, it should be sound and free from sap, bad knots, shakes, wanes, or any other imperfections. The plank should be full on the edges, and not less than nine nor more than sixteen inches wide, if of hard wood.

Thickness.—The planks are usually either three or four inches thick; but the builders of the latter roads prefer giving less strength to the plank, and more to the sleepers, which are more durable; and, therefore, recommend three-inch plank, with sleepers a foot wide. With hemlock plank, any thickness beyond three inches is wasted, for when two inches have been worn down, the projecting knots will make the road too rough to travel on, and it will require renewal. One inch more will be sufficient to hold the knots in, so that we get three inches as the proper thickness. With less knotty timber, thicker plank may be used, *provided* there will be travel enough to wear out the whole thickness from above, before it unprofitably rots out from below. When two tracks are laid, that which would be traveled by the loaded wagons going to market may be laid with four-inch plank, and the other track, for the light wagons, with three-inch plank.

Laying.—The planks should be laid directly *across* the road, at right angles, or "square," to its line. The ends of the planks are not laid evenly to a line, but project three or four inches on each side alternately, so as to prevent a rut being formed by the side of the plank track, and to make it easier for loaded wagons to get upon it: as the wheels, instead of scraping along the ends of the planks, when coming towards the track obliquely after turning off, will, on coming square against the edge of one of these projecting planks, rise directly upon it. On the Canada roads, every three planks project three inches on each side of the road alternately.

The planks were laid *lengthwise* of the road, on the first one running from Quebec, it being supposed that they would wear better, and could be more easily taken up and replaced. But it was found that loaded horses slipped upon them, (the longitudinal direction of the grain giving no hold to the feet,) that ruts were soon worn in them, and that they did not keep their places. This arrangement is, therefore, now abandoned.

The planks have also been laid *obliquely*, diagonally, or 'skewing;' so as to make an angle of 45 degrees with the line of the road, twelve feet plank making an eight feet wide road. This plan is adopted on the Longeuil and Chambly road near Montreal. Its advantages are, that the edges of the plank are not worn down so soon as when the wheels strike them directly, that the zigzag ends of the plank facilitate the getting on the track; and that there is less loss on the rejected, or "cull" planks of 12 feet, than those of 8 feet. But when a wagon wheel comes upon one end of a plank laid thus obliquely, the other end, having no load to keep it down, will spring up, if not fastened to the sleeper; and if it is, the spikes or pins will finally be loosened. Each end of each plank undergoes the action in turn, and thus the road is injured and broken up. The first method of laying the planks—at right angles to the direction of the road—is much to be preferred.

The planks must be laid so as to bear equally on the sleepers, and on the ground between them, depending chiefly on the latter for sup-

port. The earth must be well up to and touching the planks at every point, for if any space of confined air be left, dry rot soon follows. If any water be allowed to get under the planks, it forms a soft mud, which is pressed up between them, and deposited on their surface, thus excavating a cavity under them, and rendering them liable to move under passing loads, in a manner which soon wears them out. They must also be laid to close joints.

Fastening.—On the Canada roads the planks have generally been spiked or pinned down to the sleepers. The specification of the board of public works directs them to be spiked "with one spike at each end for planks 12 inches wide or less, and two at each for planks of a greater width. The spikes are to be of a description called 'pressed' spikes, made of the best English or Canadian iron. They are to be 6 1-2 inches long, 3-8 inch square with chisel-shaped edges, and good broad heads, and are to weigh five to a pound. They are to be driven with the chisel-edge across the fibres of the wood."

On the New York roads this has been considered an unnecessary expense, since the loads come equally upon both ends of the tranverse planks, and thus tend to keep them down in their places, their own weight assisting in this. But in wet and badly drained places a new consideration intervenes. If the planks are not fastened down, they will float as soon as an inch of water gets under them. The wheels of a loaded wagon pressing down each plank in turn, drive the water before them, till it finally attains force enough to throw up a plank, and thus break up the road. On the other hand, when the planks are fastened down, the whole road is floated, and the vibrations produced by the passing loads drive the water out on the sides and top of the road, and excavates cavities, which ought to be immediately filled up, an operation which is made difficult by the fastening down of the planks to the sleepers. It is, therefore, thought better to leave the plank free, and allow them to be thrown out of place, and thus at once give free passage to the water, and prevent further mischief; a repairer being kept constantly at work upon the road, and required in rainy weather to pass over it once or twice a day. It might be well, as a compromise, to spike down planks at short intervals, say every fifth or tenth plank, the rest being well driven home against these.

Covering.—The planks having been properly laid, as has been directed, should be covered over one inch in thickness, with very fine gravel, or coarse sand, from which all stones or pebbles are to be raked, so as to leave nothing upon the surface of the road, that could be forced into and injure the fibres of the planks. The grit of the sand soon penetrates into the grain of the wood, and combines with the fibres, and the droppings upon the road, to form a hard and tough covering, like felt, which greatly protects the wood from the wheels and horses' shoes. Sawdust and tan bark have also been used.

The road is now ready for use.

ART. V.—THE EARLY SPIRIT OF THE WEST.

POLITICAL PARTIES AND FACTIONS IN KENTUCKY AND THE WESTERN COUNTRY, FROM 1788 TO 1806.—*De Bow's Commercial Review April* 1850, *Vol VIII., No. IV.*

THIS is the title of an essay in the above named Review, which, instead of portraying the early patriotism and gallantry of the West—a work it might well and justly have performed—attempts, at this late day, to rake up the embers of party strife, which have been long smothered by public consent, and are now almost forgotton in the subsequent strength and prosperity of this great section of the Republic. Still, nothing can excuse the injustice and gross misrepresentation of Kentucky history, and that of the West, which this essay so grossly, betrays. It shall be the business of this reply to point out those misrepresentations, of both measures and men, which have, for many years, been the subject of the writer's study and inquiry; he might almost say: "*quorum pars fui.*"

The assertion with which this essay opens is "That the great and dominant party (meaning in Kentucky, and about 1784,) consisted of those favorable to a legal separation from the parent State preliminary to an independent State government, and admission into the Federal Union." This is only justice to the frank and loyal character of the Kentucky pioneers, confirmed by the whole history of their repeated and patient attempts to effect a separation from Virginia; and her consent to the measure repeated in four different forms, at as many different times.

But this essay represents that other parties contemplated an independent government separate and distinct from the Federal Union, and under the *protection of one of the great monarchies, of Great Britain Spain or France.* These three parties were included under the general name of disunionists, in contradistinction to those who recognised and sustained the jurisdiction of the State and federal governments in opposition to all others. This is, indeed, a peremptory statement, apparently challenging contradiction. Yet, I will venture to assert, upon a long and intimate knowledge of the parties of Kentucky, that no such term was ever, in fact, used to mark her parties; nor did the principles of disunion enter into their spirit. In 1776, before Virginia had formally claimed her dominion over the West, the colony of Transylvania was attempted to be established under the great land company of Henderson & Co., under the authority of the British Crown, then the governing power. This earliest of the western colonies, and the first which collected a legislative body in the West, was so effectually put down by the combined authority of Virginia and North Carolina, and so absolutely acquiesced in by the people, that it has scarcely left a trace of its existence, beyond the grants of land which purchased the submission of the land company. Kentucky county sprung up in the place of the new colony, with scarcely an audible murmur, and Transylvania was afterwards transposed to the oldest of

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the western literary institutions. But, when population and prosperity increased, then the pioneers began to look for a foreign market for the surplus produce of their labor, which could not pass the mountains. Then they began, naturally enough, to stretch their eyes to the Mississippi as the only practicable outlet to the ocean and the markets of the world. But, suddenly, a rumor was heard that the government, consisting of the old Congress, meditated to suspend the navigation of this great stream for twenty or thirty years, in favor of Spain. Then, indeed, murmur naturally arose from the men who perilled everything on this side of the mountains. Soon after the report of this meditated wrong to the West, reached Pittsburgh, it produced an association for the purpose of warding off this blow, so fatal to the embryo west. The association transmitted to Lexington (Ky.) an account of this negociation, so terrible to their hopes, in terms almost necessarily exaggerated in the imperfect condition of public intercourse—when no mail service existed west of Pittsburgh, and for years afterwards, only one every *two* weeks. A letter of similar import to the Pittsburgh address, was directed from the Falls of Ohio to the Governor and Legislature of Georgia, having territorial claims to the banks of the Miss. (Pitkin's U. S. 2 p. 208). This communication from Pittsburgh, occasioned, in March 1787, a public address to the citizens of the then district of Kentucky, inviting them to assemble at Danville in the ensuing May. The shades of mistake as to the actual condition of the Spanish negociation and the consequent exaggeration in these different public communications, at such a time of limited intercourse, and on so sensitive a subject, I will not now stop to point out and explain. My purpose is, to show the existence of a substantial cause for this fevered state of the public mind, on a subject dear to the hearts of the people. Well, so deeply had apprehensions for the navigation of the Mississippi affected the public mind, that Congress felt it necessary, in September, 1788, in order to remove them, to authorise its members to contradict the reports that it was disposed to treat with Spain for the navigation of the Mississippi. That body also, formally resolved that the free navigation of the Mississippi was a clear and essential right of the United States; and that the same ought to be considered and supported as such. Virginia had, in November 1786, taken up the same subject, and in a manner more decisively in favor of the rights and interests of her western citizens, contrary to what had been her own action on this very subject in the earlier and more threatening times of the Revolutionary wars. And again, so late as 1788, when the present Constitution of the United States was under discussion in the convention of Virginia, so imperfect was the public information on the subject, that Mr. Monroe was called upon to explain the whole matter to that grave assembly, in whose proceedings his communication appears. This forms the earliest full account of a negociation so deeply interesting to the West, even in its earliest weakness, when surrounded by ferocious and hostile tribes of the most warlike savages in North America.

Yet, notwithstanding this agitating state of things from causes not now to be traced, the meeting did assemble at Danville, as invited by the circular above mentioned, and adjourned without even a fire of resolutions. This is no slight evidence of the influence of pacifying

considerations not any longer accessible. This forms the principal portion of the domestic action, which no patriot can now condemn on this interesting matter.

ORIGIN OF THE SPANISH PARTY IN KENTUCKY.

The Spanish party in Kentucky, had its origin in the attempts of both France and Spain to limit the territory of the United States to the Alleghany mountains. The exertions of the Count Lucerne, the French Minister at Philadelphia, were pertinaciously directed in conformity with the instructions of his court and the interest of Spain, to prevail on the Old Congress to instruct their minister at Paris, "that the United States extend to the westward no further than settlements were permitted by the British proclamation of 1763; 2d, that the United States do not consider themselves as having any right to navigate the Mississippi—no territory belonging to them being situated thereon; 3d, that the settlements east of the Mississippi, embracing Kentucky with her northern and southern neighbors, which were prohibited as above, are possessions of the Crown of Great Britain, and proper objects against which the arms of Spain may be employed, for the purpose of making a permanent conquest for the Spanish Crown." (Pitkin's U. S., Vol 2, pp, 97, 99 & 109).

How all this intrigue of both branches of the House of Bourbon which extended from Paris and Madrid to Philadelphia and New York was defeated, is no longer necessary to narrate. It is however, a page of our history full of honor to Jefferson and Madison, and, above all, to John Jay.

The ramification of this intrigue, which first manifested itself at New York, and then at New Orleans, has a more domestic interest, and is directly connected with the subject of this essay. After the failure of the negociation between Spain and the United States, previously mentioned, owing to the haughtiness of the former in 1788, Don Gardoqui, the Spanish minister at New York, informed Mr. John Brown, then attending as a member of the old Congress from Virginia, "that if the people of Kentucky would erect themselves into an independent State and appoint a proper person to negociate with him, he had authority for that purpose, and would enter into an arrangement with them for the exportation of their produce to New Orleans."

This proposition was enclosed in a confidential letter to Judge Mc Dowell, the President of several Conventions in the district of Kentucky, (Littell's Narrative appendix, p. 40, Perkins' Annals of the West, p. 313, 1st edition). A letter of a similar spirit was written also by Mr. Brown, to Judge Muter, the Chief Justice of the district of Kentucky. These letters are likewise mentioned in a correspondence between Col. Thomas Marshall, the father of the late pre-eminent Chief Justice of the United States, and Gen. Washington communicated to the present writer by Mr. Sparks. These same offers were communicated to Mr. Madison, then a colleague of Mr. Brown, in the old Congress. In a letter to the present writer, dated Montpelier, October 11th, 1834, that venerated statesman said: "I have received yours of the 21st, ult., in which you wish to obtain my recollections of what passed between Mr. Brown and me in 1788, in

the overtures of Gandoque, that if the people of Kentucky would erect themselves into an independent State, and appoint a proper person to negotiate with him, he had authority for that purpose, and would enter into an arrangement with them for the exportation of their produce, to New Orleans. My recollection, with which, references to my manuscript papers, leaves no doubt that the overture was communicated to me by Mr. Brown. Nor, can I doubt as stated by him, I expressed the opinion and apprehension, that a knowledge of it in Kentucky, might, in the excitements there, be mischievously employed. This view of the subject, evidently presented from the natural and known impatience of the people as the waters of the Mississippi, for a market for the products of their exuberant soil; from the *distrust* of the Federal policy produced by the project for surrendering the navigation of that river for a term of many years." "I owe it to Mr. Brown, with whom I was on intimate friendship, when we were associated in public life, to observe, that I always regarded him whilst steadily attentive to the interests of his constituents, as duly impressed with the importance of the Union, and anxious for its prosperity." Such is a full and unvarnished account of the first overtures of Spain to Kentucky. And, I must freely admit that the first idea which strikes the mind in considering this letter is, that Mr. Brown, and in all probability, Wilkinson, Innes, Muter, and many of the other eminent statesmen of Kentucky did incline to adopt some connexion with Spain, independent of the feeble and disgraced confederation which existed in 1788—a government in name more than in fact, disobeyed at home and despised abroad. There was another circumstance most exasperating to the hearts of the western people, that this government, imbecile as it was, had formally proffered to shed the very life blood of the West, by suspending the navigation of the Mississippi for twenty or thirty years, in terrible probability for ever. Concessions seldom go backward between rival nations. Under these aggravating circumstances. I do not think a commercial connection with Spain is to be deemed cause of reprobation against the patriotism of Kentucky statesmen; on the contrary, at that time, and under those circumstances, it might be demanded by the most sacred duties to this deserted and forlorn section of a disjointed confederation. I have said on another occasion what I now conscientiously confirm, that to try the conduct of Kentucky statesmen in 1788, under a confederation in ruins and in factions by the same principles which should now direct the mind under an efficient and beneficient government, would be absurd and unjust. The peculiar circumstances of the times must be adverted to in order to arrive at any just estimate of the measure or its authors. What then were these circumstances? They are eloquently and not less truly narrated by Gen. Wilkinson "open to savage depredations, exposed to the jealousies of the Spanish Government unprotected by that of the old confederation, and denied the *navigation of the Mississppi*, the only practicable channel by which the productions of their labor could find a market." (Wilkinson's memoirs, vol 2 p. 119). Again, "all who ventured on the Mississippi had their property seized by the first commanding (Spanish) officer whom they met, and little or no communication was kept up between the two countries." Was this a

condition for any community, much less for one of high-spirited freemen, with their arms in their hands, just fresh from hunting down the British lion, to tolerate any longer than it was unavoidable." How long would any section of this republic, however faithfully devoted to the Union, *now*, submit to so intolerable a state of things? Couple these grievances which must have blasted the industry and the dearest hopes of the country—which must have driven the immigrant back over the mountains, and condemned the rich lands of Kentucky and the West, to waste their fertility in uncultivated forests—again to become an Indian wilderness rather than continue a civilized community. From these circumstances some faint idea may be conceived of the necessity which the statesmen and people of Kentucky must have felt to look to some other protection for the vital interests of the country, than the tottering and imbecile confederacy which then deluded the country under the pretence of a government. Can circumstances be imagined more imperative on Kentucky patriots and statesmen to look for that protection which their own government could not give, and without which all government is a mockery and a perversion of the very purposes of its creation?

This whole subject was before the district convention at Danville, in Kentucky, in 1788; Mr. John Brown was on its floor as a member, and was called out by Gen. Wilkinson to communicate to the convention the information he possessed on the subject of the navigation of the Mississippi. To this invitation Mr. Brown replied that "he did not feel himself at liberty to disclose what had passed in private conferences between the Spanish Minister, Don Gardoqui, and himself; but this much in general he would venture to inform the convention, that provided we are unanimous, every thing we could wish for is within our reach." (See Littell Marshall and Butler.) Nothing further was done at this convention than adopting an address to Congress and the Legislature of Virginia, urging the independence of Kentucky. It may as well be mentioned in connection with this part of my subject, that Mr. Brown informed the present writer (and who that ever knew the conscientious veracity of his venerable character will not appreciate its unimpeachable worth,) that in advocating unanimity in the convention, and declaring that every thing we could wish for is within our reach, he meant State independence; not distinct from the Union of the States; but just as it was afterwards obtained in connection with the other States." The backwardness which Mr. Brown discovered in the Convention, to enlarge upon the offers of the Spanish Minister previously communicated to Judges McDowell and Muter, may well be attributed to a change of opinion produced by the interview with Mr. Madison. This frank disclosure to an eminent colleague in addition to the communications to the heads of the legislature, and the bench of the district, (as the President of the Convention and the Chief Justice may well be termed,) at once vindicates the loyalty of Mr. Brown to the union of the States and accounts for his reluctance to furnish any further information on the subject. It may be well, at this late day to add, that Mr. Brown enjoyed the highest confidence of his compatriots—that he not only had the rare honor of being the only representative from the western country, who ever sat in the old Congress; but was the first representative of Ken-

tucky, in the Federal government twice; elected her Senator, in the council of the Union; and, moreover, by the appointment of Washington he was a member of the board of war in the West, associated with Shelby and Scott. Are these honors that would have been extended to a Spanish conspirator? How comes this essay to assert that "Brown readily acceded to the proposed terms by Gardoqui; that he arranged the terms of a commercial union with Louisiana; 2d. that to Judge McDowell he (Brown) communicated a general outline of the terms of alliance proposed to the people of Kentucky, on the part of Spain."? Was any thing like a final and conclusive arrangement entered into on the part of Brown, or acceded to by Spain?—anything beyond a bare overture suggested by the Spanish Minister, communicated to the members of the convention in Kentucky, and in person by himself—all published in the lifetime and with the knowledge of the parties, State and Federal, and in the face of a public convention. Are the public of this day to be imposed upon and deceived by random statements drawn from no other source than a virulent and partizan paper, the *Western World*, published for a short time in Kentucky, some forty years ago? Yet, this is the authority to which this essay stoops to support its scandals against the early spirit and the statesmen of the West. Such is the testimony produced for matters which have been sifted by excited discussions recorded in legislative proceedings, and have finally received the formal stamp of history. Such is the progress and close of the first phase or form of the Spanish party in Kentucky. It originated in attempts to resist the surrender of the navigation of the Mississippi to Spain, the rich inheritance which millions are now enjoying, as proposed by the old Congress and yet despised by Spain. The next great object with the people of Kentucky, if at all inferior to the former, was the establishment of a domestic government distinct from Virginia. This was effected in 1792, with the consent of all the high parties.

(*To be Continued.*)

ART. IV. — CALIFORNIA LAND TITLES — CATHOLIC MISSIONS.

The report of W. Carey Jones "on the subject of land titles in California, made in pursuance of instructions from the Secretary of State and the Secretary of the Interior" is a document of great length; and contains many facts which, we think, will be interesting and perhaps useful to our readers. We have devoted a larger space to this report than we are in the habit of giving to articles on any one subject; but, desiring to publish the entire account of the "California Missions" we could not, with propriety, separate it from the preceding part of the report.

We had hoped that this document would have afforded some information relating to the laws which prevailed in California in respect

to mines and mining at the time of its cession to the United States—in this however we have been disappointed. Mr. Jones, as it appears confined his enquiries within the range of his instructions; and, is consequently, silent on this subject. He informs us that the grants of land from Mexico to individuals contain no reservation of the mines, which they may contain, and leaves us to infer that the government divested itself of all control over the mines when it disposed of the soil.

Should this inference be correct it will relieve the mineral lands and mining interest of California from certain embarrassing questions that have been suggested by learned individuals, both in this country and in Europe.

From the loose manner in which grants appear to have been made in California, we are persuaded that great difficulties will arise in the adjustment of titles: much will depend upon the legislation of Congress in regard to the nature of the evidence required to establish the right of the claimant; and much circumspection will be required in framing a law that will secure to the grantee all the benefits to which he is entitled by virtue of the treaty, and at the same time guard the government against fraudulent claims. EDITORS.

On the subject of Land Titles in California, made in pursuance of instructions from the Secretary of State and the Secretary of the Interior, by Wm. Carey Jones.

On arriving in California, my attention was immediately directed to the subjects embraced in your letter of instructions.

I. "*To the mode of creating titles to land, from the first inception to the perfect title, as practised by Mexico, within the province of California.*"

All the grants of land made in California (except pueblo or village lots, and except, perhaps, some grants north of the bay of San Francisco, as will be hereafter noticed) subsequent to the independence of Mexico, and after the establishment of that government in California, were made by the different political governors. The great majority of them were made subsequent to January, 1832, and consequently under the Mexican Colonization Law of 18th August, 1824, and the government regulations, adopted in pursuance of the law, dated 21st November, 1828. In January, 1832, General Jose Figueroa became Governor of the then Territory of California, under a commission from the government at Mexico, replacing Victoria, who, after having the year before displaced Echandrea, was himself driven out by a revolution. The installation of Figueroa restored quiet, after ten years of civil commotion, and was at a time when Mexico was making vigorous efforts to reduce and populate her distant territories, and consequently, granting lands on a liberal scale. In the act of 1824, a league square (being 4,428 402-1000 acres) is the smallest measurement of rural property spoken of; and of these leagues square, eleven (or nearly 50,000 acres) might be conceded in a grant to one individual. By this law, the *States* composing the federation were authorized to make special provision for colonization within their respective limits, and the colonization of the *Territories*, "conformably to the principles of the law," charged upon the Central Govern-

ment. California was of the latter description, being designated a Territory in the *Acta Constitutiva* of the Mexican federation, adopted 31st January, 1824, and by the constitution adopted 4th October of the same year.* The colonization of California, and granting of lands therein, were, therefore, subsequent to the law of 18th August, 1824, under the direction and control of the Central Government. That government, as already stated, gave regulations for the same, 21st November, 1828.

The directions were very simple. They gave the governors of the Territories the exclusive faculty of making grants, within the terms of the law—that is, to the extent of eleven leagues, or *sitios*, to individuals; and colonization grants, (more properly, *contracts*)—that is, grants of larger tracts to *empresarios*, or persons who should undertake, for a consideration in land, to bring families to the country for the purpose of colonization. Grants of the first description, that is, to families or single persons, and not exceeding eleven *sitios*, were "not to be held definitely valid," until sanctioned by *Territorial Deputation*. Those of the second class, that is *empresario* or colonization grants, (or contracts,) required a like sanction by the *Supreme Government*. In case the concurrence of the Deputation was refused to a grant of the first-mentioned class, the governor should appeal, in favor of the grantee, from the assembly to the Supreme Government.

The "*first inception*" of the claim, pursuant to the regulations, and as practised in California, was a petition to the Governor, praying for the grant specifying usually the quantity of land asked, and designating its position, with some descriptive object or boundary, and also stating the age, country, and vocation of the petitioner. Sometimes, also, (generally at the commencement of this system,) a rude *map* or *plan* of the required grant, showing its shape, and position with reference to other tracts, or to natural objects, was presented with the petition. This practice, however, was gradually disused, and a few of the grants made in late years have any other than a verbal description.

The next step was usually a reference of the petition, made on the margin by the governor, to the prefect of the district, or other near local officer, where the land petitioned for was situate, to know if it was vacant, and could be granted without injury to third persons or the public, and sometimes to know if the petitioner's account of himself was true. The reply (*informe*) of the prefect, or other officer, was written upon or attached to the petition, and the whole returned to the governor. The reply being satisfactory, the governor then issued the grant in form. On its receipt, or before, (often before the petition even,) the party went into possession. It was not unfrequent, of late years, to omit the formality of sending the petition to the local authorities, and it was never requisite, if the governor already possessed the necessary information concerning the land and the parties. In that case the grant followed immediately on the petition.

*The political condition of California was changed by the Constitution of 29th December, an act for the division of the Republic into Departments, of the 30th December, 1836. The two Californias then became a Department, the confederation being broken up, and the States reduced to Departments. The same colonization system, however, seems to have continued in California.

Again, it sometimes happened that the reply of the local authority was not explicit, or that third persons intervened, and the grant was thus for some time delayed. With these qualifications, and covering the great majority of cases, the practice may be said to have been: 1, The petition; 2. The reference to the prefect or alcalde; 3. His report, or *informe*; 4. The grant from the governor.

"*When filed, and how, and by whom recorded?*"

The *originals* of the petition and *informe*, and any other preliminary papers in the case, were filed by the secretary in the government archives, and with them a *copy* (the original being delivered to the grantee) of the grant: the whole attached together so as to form one document, (entitled, collectively, an *expediente.*) During the governorship of Figueroa and some of his successors, that is, from 22d May 1833, to 9th May, 1836, the grants were likewise *recorded* in a book kept for that purpose (as prescribed in the "regulations" above referred to) in the archives. Subsequent to that time there was no *record*, but a brief memorandum of the grant; the *expediente*, however, still filed. Grants were also sometimes registered in the office of the prefect of the district where the lands lay; but the practice was not constant, nor the record generally in a permanent form.

The next and final step in the title was the approval of the grant by the Territorial Deputation, (that is, the local legislature, afterward, when the territory was created into a Department, called the "Department Assembly.") For this purpose, it was the governor's office to communicate the fact of the grant, and all information concerning it, to the assembly. It was here referred to a committee, (sometimes called a committee on vacant lands, sometimes on agriculture,) who reported at a subsequent sitting. The approval was seldom refused; but there are many instances where the governor omitted to communicate the grant to the assembly, and it consequently remained unacted on. The approval of the assembly obtained, it was usual for the secretary to deliver to the grantee, on application, a certificate of the fact; but no other record or registration of it was kept than the written proceedings of the assembly. There are, no doubt, instances, therefore, where the approval was in fact obtained, but a certificate not applied for; and as the journals of the assembly, now remaining in the archives, are very imperfect, it can hardly be doubted that many grants have received the approval of the assembly, and no record of the fact now exists. Many grants were passed upon and approved by the assembly, in the winter and spring of 1846, as I discovered by loose memoranda, apparently made by the clerk of the assembly for future entry, and referring to the grants by their numbers—sometimes a dozen or more on a single small piece of paper; but of which I could find no other record.

"*So, also, With the subsequent steps, embracing the proceedings as to survey, up to the perfecting of the title?*"

There were not, as far as I could learn, any regular surveys made of grants in California, up to the cessation of the former government. There was no public or authorised surveyor in the country. The grants usually contained a direction that the grantee should receive judicial possession of the land "from the proper magistrate, (usually the nearest alcalde) in virtue of the grant," and that the

boundaries of the tract should then be designated by that functionary, with "suitable land marks." But this injunction was usually complied with, only by procuring the attendance of the magistrate, to give judicial possession, according to the verbal description contained in the grant. Some of the old grants have been subsequently surveyed, as I was informed, by a surveyor under appointment of Col. Mason, acting as Governor of California. I did not see any official record of such surveys, or understand that there was any. The "*perfecting of the title*" I suppose to have been accomplished when the grant received the concurrence of the assembly; all provisions of the law, and of the colonization regulations of the supreme government, pre-requisites to the title being "definitely valid," having been then fulfilled. These, I think, must be counted *complete titles.*

"*And if there be any more books, files or archives, of any kind whatsoever, showing the nature, character and extent of these grants?*".

The following list comprises the books of record and memoranda of grants, which I found existing in the government archives at Monterey:

1. "1828. Cuaderno del registro de los sitios, fierras, y senales que posean los inhabitantes del territorio de la Nueva California."—(Book of registration of the farms, brands, and marks [for marking cattle] possessed by the inhabitants of the territory of New California.)

This book contains information of the situation, boundaries and appurtenances of several of the missions, as hereafter noticed; of two pueblos, San Jose and Branciforte, and the records of about twenty grants, made by various Spanish, Mexican and local authorities, at different times, between 1784 and 1825, and two dated in 1829. This book appears to have been arranged upon information obtained in an endeavor of the government to procure a registration of all the occupied lands of the territory.

2. Book marked "*Titulos.*"

This book contains records of grants, numbered from 1 to 108, of various dates, from 22d of May, 1833, to 9th of May, 1836, by the successive governors, Figueroa, Jose Castro, Nicholas Gutierrez, and Mariano Chico. A part of these grants (probably all) are included in a file of *expedientes* of grants, hereafter described, marked from No. 1 to 579; but the numbers in the book do not correspond with the numbers of the same grants in the *expedientes.*

3. "Libro donde se asciertan los despachos de terrenos adjudicados enos de 1839 and 1840."—(Book denoting the concessions of land adjudicated in the years of 1839 and 1840.)

This book contains a brief entry, by the secretary of the department, of grants, including their numbers, dates, names of the grantees and of grants, quantity granted, and situation of the land, usually entered in the book in the order they were conceded. This book contains the grants made from 18th January, 1839, to 8th December, 1843, inclusive.

4. A book similar to the above, and containing like entries of grants issued between 8th January, 1844, and 23d December, 1845.

5. file of *expedientes* of grants—that is, all the proceedings (except of the Assembly) relating to the respective grants, secured, those of each grant in a separate parcel, and marked and labelled with its num-

ber and name. This file is marked from No. 1 to 579, inclusive, and embraces the space of time between 13th of May, 1833, and to July 1846. The numbers, however, bear little relation to the dates. Some numbers are missing, of some there are duplicates—that is, two distinct grants with the same number. The expedientes are not at all complete; in some places the final grant appears to have been refused; in others it is wanting. The collection, however, is evidently intended to represent estates which have been granted, and it is probable that in many or most instances the omission apparent in the archives is suppplied by original documents in the hands of the parties, or by long permitted occupation.

These embrace all the record books and files belonging to the territorial department archives, which I was able to discover.

I am assured, however, by Mr. J. C. Fremont, that, according to the best of his recollection, a book for the year 1846, corresponding to those above noted, extending from 1839 to the end of 1845, existed in the archives while he was Governor of California, and was with him when he delivered them, in May, 1847, to the officer appointed by Gen. Kearney to receive them of him at Monterey.

II. "*Chiefly the large grants, as the missions, and whether the title to them be in assignees, or whether they have reverted, and vested in the sovereign?*"

I took much pains, both in California and in Mexico, to assure myself of the situation, in a legal and proprietary point of view, of the former great establishments known as the *missions* of California. It had been supposed that the lands they occupied were *grants*, held as the property of the church, or of the mission establishments as corporations. Such, however, was not the case. All the missions in Upper California were established under the direction, and mainly at the expense, of the government, and the missionaries there had never any other rights than to the occupation and use of the lands for the purpose of the missions, and at the pleasure of the government. This is shown by the history and principles of their foundation, by the laws in relation to them, by the constant practice of the government toward them, and, in fact, by the rules of the Franciscan order, which forbid its members to possess property.

The establishment of missions in remote provinces was a part of the colonial system of Spain. The Jesuits, by a license from the Viceroy of New Spain, commenced in this manner the reduction of Lower California in the year 1697. They continued in the spiritual charge, and in a considerable degree of the temporal government, of that province, until 1767, when the royal decree abolishing the Jesuit order throughout New Spain, was there enforced, and the missions taken out of their hands. They had then founded fifteen missions, extending from Cape St. Lucas, nearly to the head of the sea of Cortes, or Californian gulf. Three of the establishments had been suppressed by order of the Viceroy; the remainder were now put in charge of the Franciscan monks, of the college of San Fernando, in Mexico, hence sometimes called "*Fernandinos.*" The prefect of that college, the Rev. Father Junipero Serra, proceeded in person to his new charge, and arrived, with a number of monks, at Loreto, the capital of the peninsula, the following year (1768). He was there, soon

after, joined by Don Jose Galvez, inspector general (*visitador*) of New Spain, who brought an order from the king, directing the founding of one or more settlements in Upper California. It was therefore agreed that Father Junipero should extend the mission establishments into Upper California, under the protection of *presidios* (armed posts) which the government would establish at San Diego and Monterey. Two expeditions, both accompanied by missionaries, were consequently fitted out, one to proceed by sea, the other by land, to the new territory. In June, 1769, they had arrived, and in that month founded the first mission, about two leagues from the port of San Diego. A *presidio* was established at the same time, near the port. The same year a presidio was established at Monterey, and a mission establishment begun. Subsequently the Dominican Friars obtained leave from the King to take charge of part of the missions of California, which led to an arrangement between the two societies, whereby the missions of Lower California were committed to the Dominicans, and the entire field of the upper province remained to the Franciscans. This arrangement was sanctioned by the political authority, and continues to the present time. The new establishments flourished, and rapidly augmented their numbers, occupying first the space between San Diego and Monterey, and subsequently extending to the northward. A report from the viceroy to the King, dated at Mexico, 27th December, 1793, gives the following account of the number, time of establishment, and locality of the missions existing in New California at that time:

1. San Diego de Alcala,	Lat. 32	° 42'	July 16, 1769
2. San Carlos de Monterey,	36	33	June 3, 1770
3. San Antonio de Padua,	36	34	July 14, 1771
4. San Gabriel de los Temblores,	34	10	Sept. 8, 1771
5. San Luis Obispo,	31	38	Sept. 1, 1772
6. San Francisco (Delores),	37	56	Oct. 9, 1776
7. San Juan Capistrano,	33	30	Nov. 1, 1776
8. Santa Clara,	37	00	Jan. 18, 1777
9. San Buenaventura,	34	36	Mar. 31, 1782
10. Santa Barbara,	34	28	Oct. 4, 1786
11. Purisima Conception,	35	32	Jan. 8, 1787
12. Santa Cruz,	36	58	Aug. 28, 1791
13. La Solidad,	36	38	Oct. 9, 1791

At first, the missions nominally occupied the whole territory, except the four small military posts of San Diego, Santa Barbara, Monterey, and San Francisco; that is, the limits of one mission were said to cover the intervening space to the limits of the next; and there were no other occupants except the wild Indians, whose reduction and conversion was the object of the establishments. The Indians, as fast as they were reduced, were trained to labor in the missions, and lived either within its walls, or in small villages near by, under the spiritual and temporal direction of the priests, but the whole under the political control of the governor of the province, who decided contested questions of right or policy, whether between different missions, between missions and individuals, or concerning the Indians. Soon, however, grants of land began to be made to individuals, especially to retired soldiers, who received special favor in the distant colonies of

Spain, and became the settlers and founders of the country they had reduced and protected. Some settlers were also brought from the neighboring provinces of sonora and Sinaloa, and the towns of San Jose, at the head of the bay of San Francisco, and of Los Angeles, eight leagues from the port of San Pedro, were early founded. The governor exercised the privilege of making concessions of large tracts, and the captains of the presidios were authorised to grant building lots, and small tracts for gardens and farms, within the distance of two leagues from the presidios. By these means the mission tracts began respectively to have something like known boundaries ; though the lands they thus occupied were still not viewed, in any light, as the property of the missionaries, but as the domain of the crown, appropriated to the use of the mission while the state of the country should require it, and at the pleasure of the political authorities.

It was the custom throughout New Spain, (and other parts of the Spanish colonies also,) to secularize, or to subvert, the mission establishment at the discretion of the ruling political functionary ; and this not as an act of arbitrary power, but in the exercise of an acknowledged ownership and authority. The great establishments of Sonora, I have been told,were divided between white settlements and settlements of the Indian pupils, or neophytes of the establishments. In Texas the missions were broken up, the Indians were dispersed, and the lands have been granted to white settlers. In New Mexico, I am led to suppose, the Indian pupils of the missions, or their descendants, still, in great part, occupy the old establishments ; and other parts are occupied by white settlers, in virtue of grants and sales.* The undisputed exercise of this authority over all the mission establishments, and whatever property was pertinent to them, is certain.

The liability of the missions of Upper California, however, to be thus dealt with, at the pleasure of the Government, does not rest only on the argument to be drawn from this constant and uniform practice. It was inherent in their foundation—a condition of their establishment. A belief has prevailed, and it is so stated in all the works I have examined which treat historically of the missions of that country, that the first act which looked to their secularization, and especially the first act by which any authority was conferred on the local government for that purpose, or over their temporalities, was an act of the Mexican Congress of 17th August, 1833. Such, however, was not the case. Their secularization—their subversion—was looked for in their foundation ; and I do not perceive that the local authority (certainly not the supreme authority) has ever been without that lawful jurisdiction over them, unless subsequent to the colonization regulations of 21st Nov., 1828, which temporally exempted mission lands

*Since writing the above, I have learned from the Hon. Mr. Smith, delegate from the Territory of New Mexico, that the portion of each of the former mission establishments which has been allotted to the Indians is *one league square*. They hold the land, as a general rule, in community, and on condition of supporting a priest and maintaining divine worship. This portion and these conditions are conformable to the principles of the Spanish laws concerning the allotment of Indian villages. Some interesting particulars of the foundation, progress and plan of the missions of New Mexico are contained in the report, or information, before quoted, of 1793, from the Viceroy to the King of Spain, and in extracts from it given in the papers accompanying this Report.

from colonization. I quote from a letter of "instructions to the commandant of the new establishment of San Diego and Monterey," given by Viceroy Bucareli, 17th August, 1773:

"Art. 15. When it shall happen that a mission is to be formed into a pueblo, (or village,) the commandant will proceed to reduce it to the civil and economical government, which according to the laws, is observed by other villages of this kingdom; then giving it a name, and declaring for its patron the saint under whose memory and protection the mission was founded." (Cuando llegee el caso de que haya de formarse en el pueblo una mision, procedera el commendante a reducirlo al gohierno civil y economico que observan, segun las leyes, los demas de este reyno poniendole dombre entonces, declarandole por su titular el santo bajo cuya memoria y venerable proteccion se funde la mision.)

The right, then, to re-model these establishments at pleasure, and convert them into towns and villages, subject to the known policy and laws which governed settlements of that description,* we see was a principle of their foundation. Article 7 and 10, of the same letter of instructions, show us also that it was a part of the *plan* of the missions that their conditions should be thus changed; that they were regarded only as the nucleus and bases of communities to be thereafter emancipated, acquire proprietary rights and administer their own affairs; and that it was the duty of the governor to choose their sites, and direct the construction and arrangement of their edifices, with a view to their convenient expansion into towns and cities. And not only was this general revolution of the establishments thus early contemplated and provided for, but meantime the governor had authority to reduce their possessions by grants within and without, and to change their condition by detail. The same series of instructions authorised the governor to grant lands, either in community or individually, to the Indians of the missions, in and about their settlements on the mission lands; and also to make grants to settlements of white persons. The governor was likewise authorised at an early day to make grants to soldiers who should marry Indian women trained in the missions; and the first grant (and only one I found of record) under this authorisation, was of a tract near the mission edifice of Carmel, near Monterey. The authorisations given to the captains of *presidjos* to grant lands within two leagues of their posts, expressly restrains them within that distance, so as to leave the territory beyond—though all beyond was nominally attached to one or the other of the missions—at the disposition of the superior guardians of the royal property. In brief, every fact, every act of government, and principle of law applicable to the case which I have met in this investigation, go to show that the missions of Upper California were never from the first, reckoned other than government establishments, or the founding of them to work any change in the ownership of the soil,

*A revolution more than equal to the modern *secularization*, since the latter only necessarily implies the turning over of the temporal concerns of the mission to secular administration. Their conversion into pueblos would take from the missions all semblance in organization to their originals, and include the reduction of the missionary priests from the heads of great establishments, and administrators of large temporalities, to parish curates: a change quite inconsistent with the existence in the priests or the church of any proprietary interest or right over the establishment.

which continued in and at the disposal of the crown, or its representatives. This position was also confirmed, if it had needed any confimation, by the opinions of high legal and official authorities in Mexico. The missions—speaking collectively of priests and pupils—had the *usufruct;* the priests the administrators of it; the whole resumable, or otherwise disposable, at the will of the crown or its representatives.

The object of the mission was to aid in the settlement and pacification of the country, and to convert the natives to Christianity. This accomplished, settlements of white people established, and the Indians domiciliated in villages, so as to subject them to the ordinary magistrates, and the spiritual care of the ordinary clergy, the *missionary* labor was considered fulfilled, and the establishment subject to be dissolved or removed. This view of their purposes and destiny fully appears in the tenor of the decree of the Spanish Cortes, of 13th September, 1813.* The provisions of that act, and the reason given for it, develop in fact the whole theory of the mission establishments. It was passed "in consequence of a complaint by the Bishop elect of Guiana of the evils that afflicted that province, on account of the Indian settlements in charge of missions not being delivered to the ecclesiastical ordinary, though thirty, forty, and fifty years had passed since the reduction and conversion of the Indians." The Cortes therefore decreed:

1. That all the new *reducciones y doctrines*, (that, is, settlements of Indians newly converted, and not yet formed in parishes,) of the provinces beyond sea, which were in charge of missionary monks, and had been ten years subjected, should be delivered immediately to the respective ecclesiastical ordinaries, (bishops,) "without resort to any excuse or pretext, conformably to the laws and cedulas in that respect."

2. That as well these missions, (*doctrinas*,) as all others which should be erected into curacies, should be canonically provided by the said ordinaries, (observing the laws and credulas of the royal right of patronage,) with fit ministers of the secular clergy.

3. That the missionary monks, relieved from the converted settlements, which should be delivered to the ordinary, should apply themselves to the extension of religion in benefit of the inhabitants of other wilderness parts, proceeding in the exercise of their missions conformably to the directions of paragraph 10, article 335, of the Constitution.†

6. That the missionary monks should discontinue immediately the government and administration of the property of the Indians, who should choose by means of their *ayuntamientos*, with intervention of

* "Collections of Decrees of the Spanish Cortes, reputed in force in Mexico." Mexico, 1829, p. 106.

†The following is the clause referred to, namely, paragraph 10, art. 335, Constitution of the Spanish Monarchy, 1812:

"The provincial councils of the provinces beyond sea shall attend to the order, economy, and progress of the missions for the conversion of infidel Indians, and to the prevention of abuses in that branch of administration. The commissioners of such missions shall render their accounts to them, which accounts they shall in their turn forward to the government."

This clause of itself settles the character of these establishments, as a branch of the public administration.

the superior political authority, persons among themselves competent to administer it; the lands being distributed and reduced to private ownership, in accordance with the decree of the 4th January, 1813, on reducing vacant and other lands to private property."*

It has also been supposed, that the act above alluded to of the Mexican Congress, [act of 17th August, 1833,] was the first assertion by the Mexican government of property in the missions, or that they by that act first became [or came to be considered] national domain. But this is likewise an error. The Mexican government has always asserted the right of property over all the missions of the country, and I do not think that the supposition has ever been raised in Mexico, that they were the property of the missionaries or the church.

The General Congress of Mexico, in a decree of the 4th August, concerning the public revenue, declares the estates of the inquisition, as well as all temporalities, to be the property of the nation; [that is no doubt, in contradistinction from property of the States—making no question of their being public property.] This term would include not only the mission establishments, but all rents, profits, and income the monks receive from them. A like act of the 7th July, 1831, again embraces the estates of the inquisition and temporalities as national property. and places them with "other rural and suburban estates," under charge of a director general. The exclusive regulations for colonizing the Territories may raise an idea of territorial and native property in them, but it puts out of the question any proprietary right in the missionaries.

The 17th article of these regulations, [executive regulations for colonization of the Territories, adopted 21st November, 1828,] relates to the missions, and directs that, "in those Territories where there are missions, the lands which they occupy shall not at present be colonized, nor until it be determined if they ought to be considered as property of the settlements of the neophyte-catechumens and Mexican settlers."

The subsequent acts and measures of the general government of Mexico in direct reference to missions, and affecting those of California, are briefly as follows:

A decree of the Mexican Congress of 20th November, 1833, in part analogous to the decree before quoted of the Spanish Cortes of

* "Collection of Decrees of the Spanish Cortes," &c., p. 56. This decree provides:

1. That "all the vacant or royal lands, and town reservations, (*propios y arbitrios*, lands reserved in and about towns and cities for the municipal revenue) both in the peninsula and islands adjacent, and in the provinces beyond sea, except such commons as may be necessary for the villages, shall be converted into private property; provided, that in regard to town reservations some annual rents shall be reserved."

2. That "in whatever mode these lands were distributed, it should be in full and exclusive ownership, so that their owners may enclose them, (without prejudice of paths, crossings, watering-places, and servitudes,) to enjoy them freely and exclusively, and destine them to such use or cultivation as they may be best adapted to; but without the owners ever being able to entail them, or to transfer them, at any time or by any title in *mortmain*."

3. "In the transfer of these lands shall be preferred the inhabitants of the villages, (or settlements,) in the neighborhood where they exist, and who enjoyed the same in common while they were vacant."

September, 1813, directing their general secularization, and containing these provisions:

1. The government shall proceed to secularize the missions of Upper and Lower California.

2. In each of said missions shall be established a parish, served by a curate of the secular clergy, with a donation of two thousand to two thousand five hundred dollars, at the discretion of the government.

4. The mission churches, with the sacred vessels and ornaments, shall be devoted to the uses of the parish.

5. For each parish, the government shall direct the construction of a cemetery outside of the village.

7. Of the buildings belonging to each mission, the most fitting shall be selected for the dwelling of the curate, with a lot of ground not exceeding two hundred varas square, and the others appropaiated for a municipal house and schools.

On the 2d December, 1833, a decree was published to the following effect:

"The government is authorized to take all measures that may assure the colonization, and make effective the secularization of the missions of Upper and Lower California, being empowered to this effect to use, in the manner most expedient, the *fincas de obras pias* (property of the piety fund) of those territories, to aid the transportation of the commission and families who are now in this capital destined thither."

The commission and emigrants, spoken of in this circular, were a colony under the charge of Don Jose Maria Hijar, who was sent the following spring (of 1834,) as director of colonization, with instructions to the following effect: That he should "make beginning by occupying all the property pertinent to the missions of both Californias;" that in the settlements to be formed, special care should be taken to include the indigenous (Indian) population, mixing them with the other inhabitants, and not permitting any settlement of Indians alone; that topographical plans should be made of the squares which were to compose the villages, and in each square building-lots be distributed to the colonist families; that outside the villages there should be distributed to each family of colonists, in full dominion and ownership, four *caballerias** of irrigable land, or eight, if dependent on the seasons, or sixteen if adapted to stock raising, and also live stock and agricultural implements; that this distribution made, (out of the movable property of the mission,) one-half the remainder of said property should be sold, and the other half reserved on account of government, and applied to the expensesof worship, maintenance, of the missionaries, support of schools, and the purchase of agricultural implements for gratuitous distribution to the colonists.

On the 16th April, 1834, the Mexican Congress passed an act to the following effect:

1. That all the missions in the republic shall be secularized.

2. That the missions shall be converted into curacies, whose limits shall be demarked by the governors of the States where said missions exist.

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*A *caballeria* of land is a rectangular parallelogram of 562 varas by 1,104 varas

3. This decree shall take effect within four months from the day of its publication.

The 7th November, 1835, an act of the Mexican Congress directed, that "until the curates mentioned in the second article of the law of 17th August, 1833, (above quoted,) should take possession, the government should suspend the execution of the other articles, and maintain things in the condition they were before said law."

I have, so far, referred to these various legislative and governmental acts in relation to the missions, only to show, beyond equivocation or doubt, the relation in which the government stood toward them, and the rights of ownership which it exercised over them. My attention was next directed to the changes that had taken place in the condition of those establishments, under the various provisions for their secularization and conversion into private property.

Under the act of the Spanish Cortes of September, 1813, all the missions in New Spain were liable to be secularized; that is, their temporalities delivered to lay administration; their character as *missions* taken away by their conversion into parishes under charge of the secular clergy; and the lands pertinent to them to be disposed of as other public domain. The question of putting this law in operation with regard to the missions in California was at various times agitated in that province, and in 1830, the then governor, Echandria, published a project for the purpose, but which was defeated by the arrival of a new governor, Victoria. Victoria revoked the decree of his predecessor, and restored the missionaries to the charge of the establishments, and in their authority over the Indians. Subsequent to that time, and previous to the act of secularization of August, 1833, nothing further to that end appears to have been done in California. Under that act the first step taken by the Central Government was the expedition of Hijar, above noticed. But the instructions delivered to him were not fulfilled. Hijar had been appointed Governor of California, as well as Director of Colonization, with directions to relieve Governor Figueroa. After Hijar's departure from Mexico, however, a revolution in the Supreme Government induced Hijar's appointment as political governor to be revoked; and an express was sent to California to announce this change, and with directions to Figueroa to continue in the discharge of the governorship. The courier arrived in advance of Hijar, who found himself, on landing, (in September, 1834,) deprived of the principal authority he had expected to exercise. Before consenting to co-operate with Hijar, in the latter's instructions concerning the missions, Figueroa consulted the Territorial Deputation. That body protested against the delivery of the vast property included in the mission estates—and to a settlement in which the Indian pupils had undoubtedly an equitable claim—into Hijar's possession, and contended that his authority, in the matter of the missions, depended on his commission as governor, which had been revoked, and not on his appointment (unknown to the law) as Director of Colonization. As a conclusion to the contestation which followed, the governor and assembly suspended Hijar from the last mentioned appointment, and returned him to Mexico.*

*Manifiesto a la Republica Mejicana, que hace el General Jose Figueroa, commandante general y gefe politico de la Alta California. Montery, 1835.

Figueroa, however, had already adopted (in August, 1834) a project of secularization, which he denominates a "Provisional Regulation." It provided that the missions should be converted partly into pueblos or villages, with a distribution of lands and movable property as follows: to each individual, head of a family, over twenty-five years of age, a lot of ground not exceeding four hundred nor less than one hundred varas square, in the common lands of the missions with a sufficient quantity in common for pasturage of the cattle of the village, and also commons and lands for municipal uses; likewise, among the same individuals, one-half of the live stock, grain, and agricultural implements of the mission; that the remainder of the lands, immovable property, stock, and other effects, should be in charge of mayordomos or other persons appointed by the governor, subject to confirmation by the general government; that from this common mass should be provided the maintenance of the priests and expenses of religious service, and the temporal expenses of the mission; that the minister should choose a place in the mission for his dwelling; that the emancipated Indians should unite in common labors for the cultivation of the vineyards, gardens, and field lands, which should remain undivided until the determination of the Supreme government; that the donees, under the regulation, should not sell, burthen, or transfer, their grants, either of land or cattle, under any pretext; and any contracts to this effect should be null, the property reverting to the nation, the purchaser losing his money; that lands, the donee of which might die without leaving heirs, should revert to the nation; that *rancherias* (hamlets of Indians) situated at a distance from the missions, and which exceed twenty-five families, might form separate pueblos, under the same rules as the principal one. This regulation was to begin with *ten* of the missions, (without specifying them,) and successively be applied to the remaining ones.

The deputation, in session of the 3d of November of the same year, (1834,) made provision for dividing the missions and other settlements into parishes or curacies, according to the law of August, 1833; authorized the missionary priests to exercise the functions of curates, until curates of the secular clergy should arrive, and provided for their salaries and expenses of worship. No change was made, in this act, in the regulations established by Governor Figueroa, for the distribution and management of the property.

Accordingly, for most or all of the missions, administrators were appointed by the governor; and in some, but not all, partial distributions of the lands and movable property were made, according to the tenor of the regulation. From this time, however, all tracts of lands pertinent to the missions, but not directly attached to the mission buildings, were granted, as any other lands of the territory, to the Mexican inhabitants, and to colonists, for stock farms and tillage.

The act of the Mexican Congress of 1835, directing the execution of the decree of 1833 to be suspended until the arrival of curates, did not, as far as I could ascertain, induce any change in the policy already adopted by the territorial authorities.

On the 17th January, 1839, Governor Alvarado issued regulations for the government of the administrators of the missions. These regulations prohibited the administrators from contracting debts on ac-

count of the missions; from slaughtering cattle of the missions, except for consumption, and from trading the mission horses or mules for clothing for the Indians; and likewise provided for the appointment of an inspector of the missions, to supervise the accounts of the administrators, and their fulfilment of their trusts. Art. 11 prohibited the settlement of white persons in the establishments, "whilst the Indians should remain in community." The establishments of San Carlos, San Juan Bautista and Sonoma were excepted from these regulations, and to be governed by special rules.

On the first of March, 1840, the same governor, Alvarado, suppressed the office of administrators, and replaced them by *mayordomos*, with new and more stringent rules for the management of the establishments; but not making any change in the rules of Governor Figueroa, regarding the lands or other property.

By a proclamation of the 29th March, 1843, Governor Micheltorena, "in pursuance (as he states) of an arrangement between the governor and the prelate of the missions," directed the following named missions to be restored to the priests "as tutors to the Indians, and in the same manner as they formerly held them," namely: the missions of San Diego, San Luis Rey, San Juan Capistrano, San Gabriel, San Fernando, San Buenaventura, Santa Barbara, Santa Ynes, La Purisima, San Antonio, Santa Clara, and San Jose. The same act set forth, that, "as policy made irrevocable what was already done," the missions should not reclaim any lands hitherto granted; but should collect the cattle and movable property which had been lent out either by the priests or administrators, and settle in a friendly way with the creditors; and likewise regather the dispersed Indians, except as such had been legally emancipated, or were at private service. That the priests might provide out of the products of the missions for the necessary expenses of converting, subsisting, and clothing the Indians, for a moderate allowance to themselves, economical salaries to the *mayordomos*, and the maintenance of divine worship; under the condition, that the priests should bind themselves in honor and conscience to deliver to the public treasury one-eighth part of all the annual products of the establishments. That the Departmental government would exert all its power for the protection of the missions, and the same in respect to individuals, and to private property, securing to the owners the possession and preservation of the lands they now hold, but promising not to make any new grants without consulting with the priests, unless where the lands were notoriously unoccupied, or lacked cultivation, or in case of necessity.

Micheltorena's governorship was shortly after concluded. There had been sent to this Department with him a considerable body of persons, called *presidartos*, that is, criminals condemned to service—usually, as in this case, military service on the frontier—and their presence and conduct gave such offence to the inhabitants, that they revolted, and expelled him and the presidarios from the country. He was succeeded by Don Pio Pico, in virtue of his being the "first vocal" of the Department Assembly,* and also by choice of the inhabitants, afterward confirmed by the central government, which, at

*According to act of the Mexican Congress of 6th of May, 1822, to provide for supplying the place of provincial governors, in default of an incumbent.

the same time, gave additional privileges to the Department, in respect to the management of its domestic affairs.

The next public act which I find, in relation to the missions, is an act of the Departmental Assembly, published in a proclamation of Governor Pico, 5th June, 1845. This act provides: 1. That the governor should call together the neophytes of the following named missions: San Rafael, Dolores, Soledad, San Miguel, and La Purisima; and in case those missions were abandoned by their neophytes, that he should give them one month's notice, by proclamation, to return and cultivate said missions, which if they did not do, the missions should be declared abandoned, and the assembly and governor dispose of them for the good of the Department. 2. That the missions of Carmel, San Juan Capistrano, and San Francisco Solano, should be considered as *pueblos*, or villages, which was their present condition; and that the property which remained to them, the governor, after separating sufficient for the curate's house, for churches, and their pertinences, and for a municipal house, should sell at public auction; the product to be applied, first, to paying the debts of the establishments, and the remainder, if any, to the benefit of divine worship. 3. That the remainder of the missions to San Diego, inclusive, should be rented, at the discretion of the governor, with the proviso, that the neophytes should be at liberty to employ themselves at their option on their own grounds, which the governor should designate for them, in the service of the rentee, or of any other person. 4. That the principal edifice of the mission of Santa Barbara should be excepted from the proposed renting, and in it the governor should designate the parts most suitable for the residence of the bishop and his attendants, and of the missionary priests then living there; moreover, that the rents arising from the remainder of the property of said mission should be disbursed, one-half for the benefit of the church and its ministry, and the other for that of the Indians. 5. That the rents arising from the other missions should be divided, one-third to the maintenance of the minister, one-third to the Indians, one-third to the government.

On the 28th October, of the same year, (1845,) Governor Pico gave public notice for the sale, to the highest bidder, of five missions, to wit: San Rafael, Dolores, Soledad, San Miguel, and La Purisima; likewise, for the sale of the remaining buildings in the pueblos (formerly missions) of San Luis Obispo, Carmel, San Juan Bautista, and San Juan Capistrano, after separating the churches and their appurtenances, and a curate's, municipal, and school houses. The auctions were appointed to take place—those of San Luis Obispo, Purisima, and San Juan Capistrano, the first four days of December following, (1845;) those of San Rafael, Dolores, San Juan Bautista, Carmel, Soledad, and San Miguel, the 23d and 24th of January, 1846; meanwhile, the government would receive and take into consideration proposals in relation to said missions.

In the same proclamation, Pico proposed to rent to the best bidder, for a period of nine years, and under conditions for the return of the property in good order and without waste, the missions of San Fernando, San Buenaventura, Santa Barbara, and Santa Ynes; the rentings to include all the stock, agricultural tools, vineyards, gardens, offices, and whatever, in virtue of the inventories, should be appur-

tenant to said missions, with "the exception only of those small pieces of ground which have always been occupied by some Indians of the missions;" likewise to include the buildings, saving the churches and their appurtenances, and the curate's, municipal, and school houses, and except in the mission of Santa Barbara, where the whole of the principal edifice should be reserved for the bishop and the priests residing there. The renting of the missions of San Diego, San Luis Rey, San Gabriel, San Antonio, Santa Clara, and San Jose, it was further announced, should take place as soon as some arrangement was made concerning their debts. It was also provided that the neophytes should be free from their pupilage, and might establish themselves on convenient parts of the missions, with liberty to serve the rentee, or any other person; that the Indians who possessed pieces of land, on which they had made their houses and gardens, should apply to the government for titles, in order that their lands might be adjudicated to them in ownership; "it being understood that they would not have power to sell their lands, but that they should descend by inheritance."

On the 30th March, 1846, the Assembly passed an act—

1. Authorizing the governor, in order to make effective the decree of 28th May previous, to operate as he should believe most expedient to prevent the total ruin of the missions of San Gabriel, San Luis Rey, San Diego, and others found in like circumstances. 2. That as the remains of said establishments had large debts against them, if the existing property was not sufficient to cover the same, they might be put into bankruptcy. 3. That if, from this authorization, the governor, in order to avoid the destruction to which the said missions were approaching, should determine to sell them to private persons, the sale should be by public auction. 4. That when sold, if, after the debts were satisfied, there should be any remainder, it should be distributed to the Indians of the respective establishment. 5. That, in view of the expenses necessary in the maintenance of the priest, and of divine worship, the governor might determine a portion of the whole property, whether of cultivable lands, houses, or of any other description, according to his discretion, and by consultation with the respective priests. 6. The property thus determined should be delivered as by sale, but subject to a perpetual interest of four per cent. for the uses above indicated. 7. That the present act should not affect any thing already done or contracts made in pursuance of the decree of 28th May last, nor prevent any thing being done conformable to that decree. 8. That the governor should provide against all impediments that might not be foreseen by the act, and in six months at farthest, give an account to the assembly of the results of its fulfilment.

Previous to several of the last mentioned acts, that is, on the 24th August, 1844, the Departmental Assembly, in anticipation of a war breaking out, passed a law, authorizing the governor, on the happening of that contingency, either "to sell, hypothecate or rent the houses, landed property and field lands of the missions, comprehended in the whole extent of the country from San Diego to Sonoma," except that of Santa Barbara, "reserved for the residence of the bishop."

These comprise all the general acts of the authorities of California which I was able to meet with, on the subject of the missions. Of the extent or manner in which they were carried into execution, so far as the missions proper—that is, the mission buildings and lands appurtenant—are concerned, but little information is afforded by what I could find in the archives. A very considerable part, however, of the grants made since the act of secularization of 1833, (comprising the bulk of all the grants in the country,) are of lands previously recognised as appurtenances of the missions, and so used as grazing farms, or for other purposes. In some cases, the petitions for such grants were referred to the principal priest at the mission to which the land petitioned for was attached, and his opinion taken whether the grant could be made without prejudice to the mission. In other cases, and generally, this formality was not observed. This remark relates to the farms and grazing grounds (*ranchos*) occupied by the missions apart from the lands around the mission buildings. There are, however, some grants in the immediate precincts of the missions, and some titles to Indians, pursuant to the regulation of Governor Figueroa, and the proclamation of Governor Pico, of record in the file of *expedientes* of grants before noticed.

What I have been able to gather from the meagre records and memoranda in the archives, and from private information and examination of the actual state of the missions, is given below. It is necessary to explain, however, still farther than I have, that in speaking of the missions now we cannot understand the great establishments which they were. Since 1833, and even before, farms of great (many leagues) extent, and many of them, have reduced the limits they enjoyed, in all cases very greatly, and in some instances into a narrow compass; and while their borders have been thus cut off, their planting and other grounds inside are dotted to a greater or less extent by private grants. The extent to which this has been the case can only be ascertained by the same process that is necessary every where in California to separate public from private lands, namely, authorised surveys of the grants according to their calls, which, though not defined, will almost always furnish some distinguishable natural object to guide the surveyor. The actual condition of the establishments, understanding them in the reduced sense above shown, was, at the time the Mexican government ceased in California, and according to the best information I could obtain, as follows:

MISSIONS.	WHERE SITUATED.	
San Diego, - -	32° 48'	Sold to Santiago Arguello, 8 June, 1846.
San Luis Rey, -	33° 03'	Sold to Antonio Cot and Andres Pico, May 13, 1846.
San Juan Capistrano,	33° 26'	Pueblo, and remainder sold to John Foster and James McKinley, 6 December, 1845.
San Gabriel, - -	34° 10'	Sold to Jul'n Workman and Hugo Reid, 18th June, 1846.
San Fernando -	34° 16'	Rented to Andres Pico, for 9 years, from December, 1845, and sold to Juan Celis, June, 1846.

San Buenaventura,	34°	36'	Sold to Joseph Arnaz.
Santa Barbara, -	34°	40'	Rented for 9 years, from June 8, 1846, to Nicholas Den.
Santa Ynes -	34°	52'	Rented to Joaquin Carillo.
La Purisima, - -	35°	00'	Sold to John Temple, December 6, 1845.
San Luis Obispo -	35°	36'	Pueblo.
San Miguel - -	35°	48'	Uncertain.
San Antonio, -	36°	30'	Vacant.
Soledad, - -	36°	38'	House and garden sold to Sobranes, January 4, 1846.
Carmel, - -	36°	44'	Pueblo.
San Juan Bautista, -	36°	58'	Pueblo.
Santa Cruz, -	37°	00'	Vacant.
Santa Clara, - -	37°	20'	In charge of priest.
San Jose, - -	37°	30'	In charge of priest.
Dolores, - -	37°	58'	Pueblo.
San Rafael, -	38°	00'	Mission in charge of priest.
San Francisco Solano,	38°	30'	Mission in charge of priest.

The information above given concerning the condition of the missions, at the time of the cessation of the former government, is partly obtained from documents in the archives, and partly from private sources. What is to be traced in the archives is on loose sheets of paper, liable to be lost; and parts, quite likely, have been lost; there may also be some papers concerning them which, in the mass of documents, escaped my examination. I have no doubt, however, of the exactness of the statement above given, as far as it goes.

It will be seen, then, that the missions—the principal part of their lands cut off by private grants, but still, no doubt, each embracing a considerable tract—perhaps from one to ten leagues—have, some of them, been sold or granted under the former government, and become private property; some converted into villages, and consequently granted in the usual form in lots to individuals and heads of families; a part are in the hands of rentees, and at the disposal of the government when these contracts expire; and the remainder at its present disposal.

If it were within my province to suggest what would be an equitable disposition of such of the missions as remain the property of the Government, I should say that the churches, with all the church property and ornaments; a portion of the principal building for the residence of the priest, with a piece of land equal to that designated in the original act of the Mexican Congress for their secularization, (to wit, two hundred varas square,) with another piece for a cemetery, should be granted to the respective Catholic parishes, for the usages specified; and the remainder of the buildings, with portions of land attached, for schools or municipal or county purposes; and for the residence of the Bishop, the same allotment at the mission of Santa Barbara that was made in the last proclamation of Governor Pico. The churches, certainly, ought not to be appropriated to any other use; and less than I have suggested, would, I think, be less than equity and justice, and less than the inhabitants have always considered and enjoyed as their right.

MISSOURI WINE.—THE KAYSER PREMIUM FOR 1849.

The wine grower's exhibition which took place in St. Louis on the 4th day of May, 1850, was calculated to sustain the favorable opinion which we have heretofore entertained and expressed in respect to grape growing in Missouri.

Twenty-two individuals entered the list as candidates for the premium of one hundred dollars, offered by Alexander Kayser, Esq., to the producer of the best specimen of Missouri wine, of the vintage of 1849, and twenty seven samples were submitted to the committee of gentlemen, selected by Mr. Kayser to award the premium.

Of these samples, about one half were so nearly of equal merrit, that it was difficult for individuals of limited experience in the use of wine, to decide between them. The premium was awarded to Mr. Jacob Romel, of Hermann. The sample chosen by the committee as the best, was a specimen of white wine, the pure juice of the Catawba grape. This is the "MISSOURI ORE BLOSSOM," a name selected by Mr. Kayser, when he proposed the premium.

Mr. Romel also exhibited a sample of red wine, which he calls the "Missouri Bird's Eye," made from a grape described in the following letter:

Hermann, March 31, 1850.

ALEXANDER KAYSER, ESQ.:

Dear Sir—Accompanying, permit me to transmit to you, two samples of the wine raised by my own hands during 1849, in Hermann, for your advertised exhibition of the present year.

Bottle labeled "B. E., 99," is here known by the name of "Missouri Bird's Eye."

Bottle labeled "C. A., 100," is pure Catawba; both, as before mentioned, were raised by myself in the year 1849.

Situation of the vineyard: Easterly, on a moderate slope.
Soil " " : Loamy, with admixture of sand.
Quantity of Vintage in 1849, of "B. E., 99:" 2 gallons.
" " " "C. A., 100:" 100 do.

With regard to the "Missouri Bird's Eye," I would add, that the grapes are not at all liable to the rot—are closely clustered; the berry is of the size of a wild cherry, well flavored, very juicy, and containing no pulp. It cannot be transplanted by slips; the new vines are produced by so termed layers.

Respectfully, JACOB ROMEL.

We regret that Mr. Romel did not give an account of his mode of culture and manufacture; and, especially, that his description of the grape from which he made his red wine was not more in detail. We infer that this is one of our own native varieties, and we should be pleased to know how it compares with the Catawba, and other cultivated American grapes, in point of productiveness; and whether the small size of the berry is of any material disadvantage in gathering and preparing the fruit for the wine press. The wine from this grape, though not considered by the committee as equal to fair samples of the Catawba, is nevertheless of very respectable quality, and

with improved management, may constitute a valuable addition to our catalogue of American varieties. We trust that Mr. Romel will favor us with a full account of its bearing and wine making qualities.

All the specimens exhibited were the produce of the Catawba grape, except the red wine above mentioned, and a sample produced from the risling, a foreign variety; and with, perhaps, one or two exceptions, were of the pure juice. They resemble, in some respects, the German wines, from the valley of the Rhine, but are said to exceed them in weight.

The better qualities of Missouri wine sell readily in St. Louis at $2 per gallon, and we are persuaded that, in time, the valley of the Missouri will rival that of the Rhine, in the productiveness and quality of its wines.

In connection with this subject we beg to suggest the policy of holding a wine grower's convention, at which every part of the south and west interested in the cultivation of the grape, shall be represented. Such a convention would afford an opportunity to individuals from different parts of the country, to compare notes, and enable each to profit by the observations and experience of the other. It would incite a spirit of emulation, popularise the use of American wines, and remove the prejudices which so generally prevail in favor of those of foreign production.

CULTURE OF THE GRAPE.—PROFIT OF VINEYARDS.

The following communication, from R. Buchanan, Esq., ex-president of the Cincinnati Horticultural Society, addressed to Charles Cist, Esq., editor of the "Advertiser," will be found useful to all who are interested in the cultivation of the vine. We publish it, more especially, for the benefit of those who cultivate a few vines for the use of the table. The frequent disappointments of this class of grape growers, occasioned by unskilful management, has been the chief cause of retarding the progress of grape growing in the United States. For, were these cultivators of a few vines uniformally successful, many of them would be encouraged to extend their vineyards, and in time become manufacturers of wine.

CULTURE OF THE GRAPE.

CINCINNATI, Feb. 10, 1849.

DEAR SIR: At your request, I now give you the mode adopted by myself, and some others in this vicinity, in cultivating the vine for wine making.

At the same time, I feel that it would come with greater propriety from Mr. Longworth, to whom, more than to any other man in the West, we are all indebted for our knowledge in grape culture.

Selecting and preparing the ground.—A hill side, with a southern aspect, is preferred. If the declivity is gentle, it can be drained by sodded, concave avenues; but if too steep for that, it must be benched or terraced, which is more expensive.

In the autumn and winter, dig or trench the ground with a spade all over, two feet deep, turning the surface under. The ground will be mellowed by the frosts of winter.

Planting.—Lay off the ground in rows, three by six feet; put down a stick twelve or fifteen inches long, where each vine is to grow.

The avenues shall be ten feet wide, dividing the vineyard into squares of one hundred and twenty feet. Plant at each stick two cuttings, separated five or eight inches at the bottom of the whole, but joined at the top—throw a spadeful of rich vegetable mould into each hole, and let the top eye of the cutting be even with the surface of the ground, and, if the matter is dry, cover with half an inch of light earth.

The cuttings should be prepared for planting by burying them in the earth immediately after pruned from the vines in the spring; and, by the latter end of March or early in April, which is the right time for planting, the buds will be swelled so as to make them strike root with great certainty. Cut off close to the joint at the lower end, and about an inch in all above the upper.

Pruning.—The first year after planting, cut the vines down to a single eye (some leave two;) the second, leave two or three; and the third, three or four. After the first year, a stake six and a half or seven feet long must be driven firmly down by each plant, to which the vines must be kept neatly tied with willow or straw as they grow. Late in February, or early in March, is the right time for spring pruning in this climate.

Summer pruning consists in breaking off the lateral sprouts and shoots, so as to leave two strong and thrifty canes or vines—one of which is to bear fruit the ensuing season, and the other to be cut down in spring pruning to a spur, to produce new shoots. These may be let to run to the top of the stakes, and trained from one to the other, until the wood is matured, say in August or September, when the green ends may be broken off. One of these vines is selected next spring for bearing fruit, and cut down to four or six joints, and bent over and fastened to the stake in the form of a bow. The other is cut away, as well as the fruit bearing wood of the last year, leaving spurs to throw out new wood for the next, and thus keeping the vine down to within one and a half to two feet of the ground. Nip off the ends of the fruit bearing branches two or three joints beyond the bunches of grapes, but do not take off any leaves.

If both the cuttings grow, take one up, or cut it off under ground, as but one vine should be left to each stake.

Culture.—The vineyard must be kept perfectly clean from weeds and grass, and hoed two or three times during the season. Keep the grass, in the avenues around, down close. About every third year put in manure, by a trench the width of a spade, and three or four inches deep, just above, and near each row; fill in with two or three inches of manure and cover up with earth.

Wine making.—Gather the grapes when very ripe, pick off the unsound and unripe berries. The bunches are then mashed in a mashing tub, or pressed through a small mill, breaking the skin but not the seed, and thrown into the press, and the screw applied until the skins are pressed dry.

Fermentation.—This process is very simple. The juice is put into clean casks in a cool cellar, and the casks filled within about four or five inches of the bung, and the bung put on loosely. The gas escapes, but the wine does not run over. In from two to four weeks, generally, the fermentation ceases, and the wine clears; then fill up the casks and tighten the bungs. In February or March, rack off into clear casks. In the spring a moderate fermentation will again take place; after that, the wine fines itself, and is ready for bottling or barreling. Use no *brandy* or *sugar*, if the grapes are sound and well ripened. Keep bunged up or corked tight, and in a cool cellar, and the wine will improve by age for many years.

R. BUCHANAN.

Mr. CHARLES CIST.

STATISTICS.

Cost of my vineyard of six acres—fourteen thousand four hundred vines:

Trenching, two feet deep, $65 per acre,	$390
Sodding avenues,	60
Cost of 30,000 cuttings, at $2 50 per thousand,	75
Planting,	70
Fourteen thousand five hundred locust stakes, at $3 per hundred,	435
Setting 14,500 stakes,	55
	$1,085
Cost of attending the first year—vine dresser $216, and a hand for one month	$231
Second year—vine dresser, $216, and a hand for two months, at $15 per month	$246
Cutting after first year, to replace failures, say	20
Hauling, Carting &c.,	68
Contingencies, &c.,	150
Average cost, say $300 per acre	$1,800

The third year the vines will produce grapes enough to pay the expenses of that year,—generally more.

For the fourth year, and a series of eight or ten years in succession, the experience of the past would indicate the following calculation to be something like a fair one:

Say six acres, average 250 gallons, at rates heretofore $1 per gallon,		$1,500
Deduct cost of vine dresser per annum	$240	
Assistance, hoeing, &c,	60	
Gathering grapes and pressing,	150	
		$450
Net profit per annum,		$1,050

To attain this, the vineyard must be favorably situated, and well attended by a competent vine dresser, and free from the disastrous visitation of the rot.

Vine Culture in this Vicinity.—It is estimated that over three hundred acres are now planted with the vine, within a circuit 12 miles round Cincinnati; nearly two-thirds of which were in bearing last year, producing, notwithstanding the rot, so injurious to many, about 50,000 to 60,000 gallons of wine.

The Catawba is our *great* vine grape, and principally cultivated. The Isabella is not preferable for wine, and is only used for table use.

Mr. Longworth, with unwearied zeal and liberality, is still experimenting with new varieties, and may yet find a rival for the Catawba.

R. BUCHANAN.

Mr. Charles Cist.

N. B. Some vineyards, in good seasons, have produced at the rate of six hundred to eight hundred gallons to the acre; but this is rare. The usual yield is three hundred to four hundred gallons, where there is but little rot. A bushel of grapes, if well ripened, will produce three and a half to four gallons of wine.

By proper economy, a man may have a vineyard of several acres in a few years, without feeling the expense to be burdensome. Commence by trenching one acre in the winter, and planting it out in the spring; next year another acre, and so on, for five or six years. After the first year, he will have his own cuttings from the first acre, and also, grapes enough to pay for the cost of planting the succeeding additions to his vineyard.

If he has suitable timber on his own land, the stakes can be got out in the winter, with but little outlay in money. By this course, the cost of a vineyard of six acres would not be half as much as mine.

Some prefer planting in rows, four by five—others, four and a half by four and a half; and on level land, three and a half by six, or even seven feet.

I have merely given, in the foregoing remarks, the course pursued by myself and some of my neighbors, without pretending that it is preferable to others.

R. B.

COMMERCIAL STATISTICS.

From De Bow's Commercial Review.

DOMESTIC NAVIGATION.

Statement showing the number and class of vessels, and the tonnage thereof in each State and Territory of the United States, for the year ending on the 30th of June, 1849.

States.	*Class of vessels.* Ships.	Brigs.	Schooners.	Sloops and Canal boats.	Steamers.	Total number of ves. built.	*Total tonnage.* Tons.	Ninety-fifths.
Maine,	119	107	105	6	7	344	82,255	56
New Hampshire,	8		4			12	6 265	89
Massachusetts,	33	7	65	9	1	115	23,888	84
Rhode Island,	3	3	4	3		13	2,760	28
Connecticut,	2	1	38	14	1	56	5,066	26
New York,	17	8	64	155	21	265	44,104	26
New Jersey,		1	57	27	2	87	8,025	55
Pennsylvania,	3	2	27	102	63	197	24,207	73
Delaware,	1		17	5		23	1,880	36
Maryland,	9	9	129		5	152	17,402	93
District of Columbia,				22		22	600	20
Virginia,	1	2	32	1	2	38	3,094	65
North Carolina,	1	1	24	3		29	2 032	37
South Carolina,			6		2	8	655	57
Georgia,		1			1	2	756	37
Florida,			1			1	119	88
Alabama,			2	1		3	106	54
Louisiana,		1	12	4	4	21	1,755	48
Tennessee,					2	2	242	79
Kentucky,					34	34	8,423	33
Missouri,				8	11	19	2,886	51
Illinois.	1	3	9			13	2,210	84
Ohio,		2	9	8	44	63	12 816	92
Michigan,			15	2	8	25	5,148	66
Total,	198	148	623	370	208	1,547	256,377	47

Statement of the registered and enrolled tonnage of the United States, showing the tonnage employed in the whale fishery; also, the proportion of the enrolled and licensed tonnage employed in the coasting trade, cod fishery, mackerel fishery and whale fishery, from 1842 to 1849, inclusive.

	1842. *Tons 95ths.*	1843. *Tons 95ths.*
Registered tonnage,	975,358 74	1,009,305 01
Enrolled and licensed,	1,117,031 95	1,149,297 92
Total tonnage,	2,092,390 69	2,158 601 93
Registered tonnage of whale fisheries,	151,612 74	152,374 86

	1844.	1845.
Registered tonnage,	1,066,764 91	1,095,172 44
Enrolled and licensed,	1,211,330 11	1,321,829 57
Total tonnage,	2,250,095 07	2,417,002 06
Registered tonnage of whale fisheries,	168,293 63	190,695 55
	1846.	1847.
Registered tonnage,	1,131,256 40	1,281,312 92
Enrolled and licensed,	1,431,795 32	1,597,732 80
Total tonnage,	2,562,084 51	2,839 045 77
Registered tonnage in the whale fishery,	186 980 16	143,858 72
	1848.	1849.
Registered tonnage,	1,360,846 85	1,438,941 53
Enrolled and licensed,	1,793,155 00	1,875,073 71
Total tonnage,	3,154,041 85	3 334 015 29
Registered tonnage in the whale fishery,	192,179 90	180,186 29

Proportion of the enrolled and licensed tonnage employed in the

	Coasting trade.	*Cod fishery.*	*Mackerel fishery.*	*Whale fishery.*
1842,	1,045,753 39	54,804 02	16,696 83	377 31
1843,	1,076,155 59	61,224 25	11,775 70	142 33
1844,	1,109,614 44	85,224 77	16,170 66	320 14
1845,	1,190,898 27	69,825 66	21,413 16	206 92
1846,	1,259,870 89	72,516 17	36,463 26	439 58
1847,	1,452 622 35	70,177 52	31,451 13	
1848,	1,620,988 16	82 651 82	44 538 78	432 75
1849,	1,731,410 84	73,882 00	49,942 02	

Condensed statement of tonnage of some of the principal ports of the United States·

Ports.	*Registered tonnage* Tons. 95ths.	*Enrolled and licensed tonnage* Tons. 95ths.	*Total tonnage* Tons. 95ths.
New York,	378,986 89	417,504 85	796,491 79
Boston,	247,336 14	49,553 85	296,890 04
New Bedford,	115,091 12	8,820 45	123 911 57
Bath,	61 938 38	26,882 46	88,820 84
Portland,	57,657 01	29,911 79	84,568 80
Philadelphia,	53,821 91	134,265 25	188,050 21
Baltimore,	79,682 31	53,343 04	134,025 00
New Orleans,	81,895 39	158,307 80	240,206 24
Charleston,	14 919 78	14,365 65	29,285 48
Wilmington,	10,873 94	5,767 88	16,641 87
Norfolk,	9,925 52	13,090 69	23,016 26
Mobile,	7,085 48	17,982 31	25,067 79
Buffalo,		40,667 34	
Pittsburgh,		35,770 63	
Detroit,		32,466 94	
St. Louis,		32,255 08	
Cuyahoga,		30,047 11	
Oswego,		22,151 68	
Chicago,		17,332 43	
Cincinnati,		16,897 74	
Total,	1,438,941 53	1,895,073 71	3,334,015 29

Statement of the number of entrances of American and foreign vessels which entered into the several districts of the United States, from foreign countries, during the year ending 30th June, 1849.

	American vessels.	*Foreign vessels.*	*Total*
Number, - - - - - - - -	11,208	8,992	20 200
Tons, - - - - - - - -	2,658,321	1,710 516	4,368,836
Crews—men, - - - - - -	105,718	87,033	192,751
" boys, - - - - - -	3,329	2,651	5,989

Statement of the number of clearances of American and foreign vessels, from ports of the United States, during the same.

	American vessels.	*Foreign vessels.*	*Total*
Number, - - - - - - - -	11,466	8,847	20,313
Tons, - - - - - - - -	2,753,724	1,675,809	4,429,433
Crews—men, - - - - - -	109,349	89,579	198,928
" boys, - - - - - -	3,422	2,704	6,126

COMMERCE OF CHILI.

The extensive intercourse which has recently been opened between Chili and California, has induced us to examine into the agricultural and commercial resources of that portion of South America bordering on the Pacific Ocean; but the information which we have been able to obtain from the latest commercial authorities, is so vague that we scarcely regard it as worthy of publication.

The following letter, to the Philadelphia *American*, from Wm. G. Morehead, late United States Consul at Valparaiso, contains more practical and useful information relating to the production of wheat and manufacture of flour in Chili, than we have been able to obtain from any other source:

VALPARAISO, March 6, 1850.

"An arrangement has been effected, within a few days past, between the millers of Chili and a company of responsible and highly respectable merchants of this city and San Francisco, for the supply of the California market with flour.

The production of wheat in Chili is very great, and this present year much larger than usual, for the reason that the demand for Chili flour in California, at the commencement of the past year, with a prospect of its continued and rapid increase, and thus furnishing a certain market, induced the agriculturists throughout the country to appropriate to the growth of wheat much more of their land than heretofore, when the demand was limited to this coast. The harvest that has just been secured (I am informed) has well rewarded the husbandman, the crop being very large. The price of wheat is, therefore, comparatively low, 25 to 31 1-4 cents per bushel in the interior on the delivery at the mills. There are produced in Chili some 50,000 to 55,000 bbls of superfine flour for export, monthly, all of which must find markets in the Pacific—the principal being California. The

great fluctuations that have frequently occurred in the market, during the past year, the price of flour varying from less than the cost of placing it there to $30, $40 and even $50 per bbl., have induced the millers to enter into the arrangement alluded to above, by which they (the millers) bind themselves to supply to this company the entire product of their mills, at the price of $4.44 per bbl., delivered in the warehouse for shipment.

The company have a large and commodious warehouse at San Francisco, at which they are bound to keep a regular and constant supply of flour, adequate at all times, to meet the demand, and to dispose of the same at a moderate profit,—thus securing to the citizens of California a supply of the staff of life at a very low price. The consumption of that market is estimated by these gentlemen to be not less than 25,000 bbls. per month at present, calculating an increase of, say 5,000 bbls. monthly.

The first shipment of flour, under the above arrangemement, will take place within two weeks, and thereafter regularly, commencing with 25,000 bbls. per month.

The extent of wheat-growing estates in this country, far exceeds anything I had ever conceived. The flour exported from the United States, in consequence of the very long voyage round Cape Horn, and crossing the line twice, has, I believe, with very little exception, been unfit for use, and was thrown overboard in the bay of San Francisco."

From this account it would seem that wheat is produced in Chili as cheap as in any other part of the globe; and whatever may be the extent of the demand in California, it is not likely that any of the wheat-growing States of the Union could compete with Chili in that market, even were a ship canal completed across the Isthmus.

We extract from "McGregor's Progress of America" the following Table, showing an approximate calculation of the annual quantity and value of Chilian native productions, including the precious metals exported from Chili in 1836 and 1839, both inclusive.

	Quantity.	*Price.* *Dols. rls.*	*Value.* *Dollars.*
Silver in bars, marcs, - -	128,580	10 0	1,285,000
Silver in Chilian coins, marcs, -	6,240	10 0	62,400
Gold in bars, marcs, - - -	1,130	128 0	144,640
Gold in Chilian coin, marcs, -	3,281	128 0	419,968
Copper in bars, quintals, - -	61,797	15 0	926,955
Copper ore, " - -	223,922	2 4	559,805
Estimated returns in bills, for supplies to foreign shipping, and salaries to diplomatic and consular agents,			800,000
Other Chilian articles of export, as wheat, flour, hides, cow-horns, wood, hemp, building timber, Chili hams, nuts and tallow,			1,500,000
Total, - - - - - -			$5,699,768

NOTE.—Though McGregor has published a great deal of statistical matter relating to the commerce of Chili he has given no complete table of exports since 1839. The population of Chili is estimated at about one million three hundred thousand, exclusive of the Araucanians or native Indians, who maintained their independence against the Spaniards.

We find the following tables of the exports of copper, copper ore, silver and gold, from Chili, in the New York Herald, which purports to have been extracted from the Valparaiso Neighbor, of August 29th, 1849.

	BARS.		REGULUS.		ORES.	
	Qqls.	*Value.*	*Qqls.*	*Value.*	*Qqls.*	*Value.*
1841	95,331	——	——	——	258,219	——
1842	77,537	——	——	——	367,964	——
1843	73,898	——	——	——	426,473	——
1844	86,418	——	110,490	418,986	205,633	374,003
1846	130,576	1'778,525	103,116	346,504	214,474	378,796
1847	140,893	1,889,253	86,202	298,667	94,577	166,485

The production of silver forms another branch of the mining interest. Discoveries of mines of great richness have been made almost continually for two or three years. Gold also will, to some extent, enter into the account. The numbers in regard to the export of silver and gold for the last seven years, (excepting one year, which is not at hand) are as follows :—

	SILVER.				GOLD BULLION.	
	BARS.		ORES.			
	Marks.	*Value.*	*Qqls.*	*Value.*	*Castel'os.*	*Value.*
1841	140,123	——	——	——	48,110	——
1842	148,283	——	——	——	124,800	——
1843	115,688	——	——	——	16,510	——
1844	118,598	1,310,996	——	——	319,600	97,097
1846	176,112	1,773,949	1,054	2,625	80,740	217,984
1847	176,285	1,798,083	1,187	9,628	112,205	301,415

From "McGregor's Progress of America."

Estimate of annual average value of the exports to all parts of the world, of native productions, including the precious metals, from Chili, Bolivia, Peru, Ecuador, and from the ports of New Grenada, Central America and Mexico, situated along the Pacific coast.

Chili,	$6,000,000	New Granada,	$150,000
Bolivia,	2,000,000	Central America,	500,000
Peru,	8,000,000	Mexico,	4,000,000
Ecuador,	1,500,000		
Total, - - - - - -			$22,150,000

COMMERCIAL REGULATIONS.

The following regulations for the delivery of freight, &c., in St. Louis, were adopted by a meeting of merchants, subscribers of the St. Louis Exchange, on the 22d of April, 1850. It is, doubtless, important to owners of property, as well as those engaged in the details of receiving, storing, &c., that some well defined and uniform custom governing such matters, should be understood and observed. Our acquaintance with the details of business, at our wharf, is not sufficient to enable us to judge whether these regulations are the best that could be devised, or not. The merchants are presumed to be the best judges of the matter.

In connection with this subject, we publish an act of the Legislature of Missouri, respecting Steamboats, approved March 12, 1849:

PROCEEDINGS OF THE MERCHANTS' MEETING.

At an adjourned meeting of the subscribers of the Merchants' Exchange, held at the Exchange rooms, on Monday evening, April 22d, on motion, George Partridge, Esq., was appointed chairman, and George DeBaun, jr., secretary.

After the object of the meeting being explained by the chairman, the following preamble and resolutions were offered by E. F. Pittman, Esq., on the part of the committee; which were fully discussed and unanimously adopted:

As our city is becoming a great mart for the sale of produce of nearly every description, it is an important matter that the rules and regulations of trade be as well defined as possible, and understood alike by all.

Few will deny that the delivery and reception of produce and merchandise upon the levee, whether received from boats or delivered to purchasers, has long since been a matter of general complaint. Losses are daily occurring, produce damaged, and many inconveniences, the result of a system so loose as the present.

The better to define a few points of general interest, and to serve as custom, where no agreement is made to the contrary, be it resolved by the Merchants' Exchange of St. Louis:

1. That it shall be incumbent upon steam and other boats to "deposit" their freight in "suitable weather," as they are required to do by an act of the State of Missouri, entitled "an Act respecting steamboats."

If our packets and other boats will discharge their cargoes in the rain, or when the clouds strongly threaten an early shower, and the produce or merchandise shall be damaged by such exposure before it can be removed from the levee or secured against loss, the boat so offending shall be held by consignees for all the damages that may accrue on the produce so exposed.

2. That the words "deposit any freight in proper manner, and in *good condition* on the wharf," to be found also in "an Act respecting steamboats," can not be construed reasonably to mean anything else

than that such articles are liable to be damaged; such as grain of all kinds, flour, tobacco, hemp, &c., shall be dunnaged in such a manner as to protect them from running water, should it rain before it is taken from the levee.

When the freight is thus deposited, it *then* becomes the duty of the boat to give the consignees verbal or written notice that their freight is ready for delivery.

After which, it shall be the duty of the consignees to go and receive their consignments, if they be placed upon the levee in such a manner that the property can be recognised, and number of packages counted; if so, it shall, on counting and finding it correct, be considered a delivery. If it be not so placed, then the parties are to abide the weigher's certificate, or the count as it is removed from the levee. It is understood, however, that nothing in this resolution shall be construed so as to release the boat from any damages she may be justly liable for, although there may have been an implied delivery of the whole.

3. That when consignees have a good reason to believe that a lot or lots of their freight are out according to law, as explained in the first and second resolutions, that it shall be their duty, if it be necessary, to cover it with tarpaulins to protect it from the weather. But that such or any other care given to produce or merchandise, where it cannot be counted or regularly delivered, shall not prejudice the consignee's claim against the boat for any packages that may be short, or any damages that may afterwards be found justly chargeable to the boat.

4. It shall be the duty of consignees, to remove from boats each lot of produce or merchandise, as designated in bills of lading, as it is completed; if put out and notice given according to law.

5. If a sale of produce or merchandise be made, such as pork, beef, flour &c., that it shall be the duty of the seller to count to the buyer or his agent, which count shall be considered as delivery, unless delivered according to the following resolution:

6. If the seller give the purchaser an order to the boat for an article sold, it shall be the duty of the buyer, within an hour after purchase, to present the order to the captain or other officer for acceptance, or assent to its correctness. If the officer of the boat accepts or assents to the order as being right, then the purchaser looks to the boat for the produce or merchandise, as specified in the order. Should the officer of the boat not accept nor assent to the correctness of the order, information shall be given to the seller immediately.

7. When the sale of any particular kinds of produce or merchandise is made, that has to be weighed, the seller shall inform the purchaser whether or not it be weighed and ready for delivery. If it be thus ready, the purchaser or his agent, shall accompany the seller to count the same for a delivery, unless the buyer will consent to be governed by the weigher's certificate.

If the produce or merchandise be not weighed and ready for delivery, the seller shall proceed, so soon as the weigher can be had, if the weather be suitable to weigh the same, first giving notice to the purchaser; and the produce or merchandise weighed, shall be considered delivered *as it is weighed*, and at the risk of the purchaser, unless he

shall prefer to receive it in a complete lot; in which case, the articles sold shall be considered delivered, so soon as the last package or article is weighed; provided the weigher completes the lot an hour before sunset, and puts it in a suitable condition for protection against the weather.

8. It is recommended to all, that a spirit of forbearance and concession be cultivated in view of the narrowness and difficulties of our levee; and that all who have anything to do with produce or merchandise, either as boatsmen, consignee, or purchaser, be requested, so far as they can, to protect said articles from damage and loss, for the general good of all interested.

E. F. PITTMAN,
N. RANNEY,
W. H. HEISKELL,
DAVID TATUM,
R. M. FUNKHOUSER } Committee.
DENNIS MARKS,
GEO. DEBAUN, JR.,
J. J. ROE.
GEORGE PARTRIDGE, Chairman.

GEO. DEBAUN, Sec'y.

AN ACT respecting steamboats.

Be it enacted by the General Assembly of the State of Missouri, as follows:

§ 1. If the captain or other officer of a steamboat or other vessel shall, in suitable weather, deposit any freight in proper manner and in good condition, on the wharf of any city or incorporated town, and shall give verbal or written notice to the consignee thereof, one hour before sun down of the day on which the same is deposited on the wharf, such depositing and notice shall constitute a delivery. If the consignee shall expressly refuse to receive such freight, the captain or officer shall cause the same to be stored at the risk and expense of the owner or consignee; and if the consignee do not expresssly refuse to receive the same, but shall fail to take the same away, in such case the captain or officer of such boat or vessel shall be at liberty either to cause such freight to be stored as aforesaid, or to leave the same on the wharf at the risk of the consigneee or owner.

§ 2. When what is among steamboatmen called *dunnage*, may be necessary to preserve any freight from injury or loss, the captain or officer of the boat or vessel shall be entitled to receive a compensation for the actual cost of such dunnage, from the consignee or owner.

Approved March 12, 1849.

LITERARY DEPARTMENT.

For the Western Journal.

WHICH WAS THE WISEST COURSE?

BY MRS. MARY R. HALL.

It was a bright autumnal evening—the husbandman had gathered in the fruits of the earth; his barns and his storehouses were filled: nature had yielded up the richest of her gifts, for the benefit of both man and beast. Seated in a warm and comfortable apartment, was a man in middle life; upon whose brow were indellibly stamped the deep furrows of unremitting toil and care. His eye was restless, and his whole face bore indications of the deepest solicitude.

After remaining silent for some time, he arose, and stirring the bright coal fire that glowed in the grate; he proceeded to examine every window, that he might be assured that each shutter was tightly closed; then locking the door, he opened a desk, and drew from thence a package, and carefully examined its contents. His eyes glowed with delight—his lips parted, as a strange smile lit up his before contracted features; for piece after piece of shining coin lay on the table before him, and a goodly number of bank notes swelled the sum to thousands; and the man of the world feasted his eyes; for here before him lay the proceeds of all his labor and speculation during the present year, which was now rapidly hastening to its close. His most sanguine hopes had been more than realised, and a feeling of satisfaction stole over his heart—if, indeed, the heart of a sordid man *can* ever glow with that holy feeling! Be this as it may, he *believed* himself in possession of this enjoyment, even though it might prove momentary. Mr. Scrapewell, whom we have introduced to our readers, was a worldly man in the *strictest* sense of the term. Gold was his idol—wealth was his god, to which he delighted to do homage. He had married rather early in life, and by the united, untiring efforts of himself and wife, had succeeded in scraping together so much of this world's goods, as to entitle him to the apellation of *a rich man*. By occupation, he was a farmer, but he had accumulated much of his wealth by successful speculation. He had but two children—both sons; the eldest of whom would be of age the ensuing spring; when his father determined to set him up in business for himself, with a capital of several thousands of dollars.

Mr. Scrapewell, though a very shrewd man, was very illiterate withal; he could read and write and manage to keep his accounts: farther than this, his *book knowledge* did not extend. As he had managed to get along in the world with this limited education, he argued that this much would be sufficient for his sons; and upon this principle he had determined to act. Accordingly, William, who was in most respects the counterpart of his worthy father, had been suffered to grow up to manhood without receiving any addition to the stock of knowledge which his parent possessed. From boyhood up, he had

been taught that *time* was *money*, and that *money* was *absolutely necessary to make a man;* that *wealth* was *all* that was required as a passport to honor and true greatness. And so the lad toiled on day after day, that he might accumulate enough to make him a *man*, aye, a *gentleman*—thus the great end of life would be secured! But quite the reverse was Harry, the younger son. He had much rather have a book, than a lump of gold in his hand; he would go without a meal at any time, if he could but be permitted to pore over some stray, tattered leaf which he had found; while the family were enjoying their repast. They all called him a fool, and many a harsh word and cruel blow did the poor boy receive because his assigned task had been hastily gone over, or almost wholly neglected, while he had sauntered far away into some lone wood; where seated on some old moss-covered rock, he was devouring the contents of a borrowed book.

He was a lover of nature, and took great delight in gazing upon the wildest of her beauties. Even the dashing streamlet had music in its gushing waters, and the wild bird's lay sent a thrill of joy into his spell-bound soul, while the bright gems of night, as they glittered in a cloudless sky, he fancied to be angels' eyes looking down upon him from their abodes of bliss. Such a spirit could not be chained down by the iron fetters of avarice, and panting, it struggled to be free.

But a short distance from Mr. Scrapewell's, there lived a man by the name of Wisely. Mr. Wisely was an industrious farmer of limited means, who, never having had the advantages of education, determined to supply the defect in himself, by giving to his children, that of which he had been denied. He was willing to toil early and late; making use of the most rigid economy in all his arrangements, that he might have means to educate his children. It was a favorite motto of his "*No one can rob my children of the wealth which I put into their heads; whereas, if I only place it in their hands, it will be no hard matter to wrest it from them.*" Harry Scrapewell found kindred spirits beneath the roof of neighbor Wisely, for Fred had been his most intimate companion from childhood up. Fred Wisely was a noble youth, upon whose high intellectual brow, true greatness sat enthroned. No one could gaze into the depths of his clear dark eye, and read the language written there, without involuntarily tracing out for him a future path of usefulness and honor. It was with deep regret that he saw the obstacles which were thrown in the way of his friend; to prevent him from obtaining that knowledge for which he sighed. He determined to render him all the assistance in his power, and accordingly devoted every evening, when Harry could leave home, to his instruction; besides, he supplied him with various books, which the greedy boy devoured by stealth. Mr. and Mrs. Wisely approved of their son's course, in striving to assist one who was so anxious to learn: while Jessie, the sweet gentle Jessie, was never so happy as when harry came to spend his evenings under their roof. Fred Wisely was now eighteen years of age, and was, the following spring, to enter upon a course of studies, preparatory to his entrance into college. Harry's heart sank within him at this information, for he felt that he must soon be deprived of his greatest earthly enjoyment. Jessie saw the struggle that was going on in his mind, and strove to comfort him in her own artless way, by telling him she would be his

teacher if he would come as usual to learn. Harry looked his gratitude to the child—for she had scarcely numbered fourteen summers—but he could not speak. The duties of the present evening were closed in the usual way, by a season of devotion, after which, Harry started for home with a heavy heart.

It was upon this same evening, when we first introduced Mr. Scrapewell to our readers, just as he had deposited his shining treasure, that a step arrested his attention; an effort to open the door followed, which was received by a slight rap. "What's wanting—who's there?" thundered out the man of money: for every noise startled him and filled his whole soul with consternation! "Will you let me in father?" responded a subdued voice; and the agitated man threw down a pistol, and nervously unlocked the door to admit his son. "Where on earth have you been Harry, and why out at this late hour? you will ruin yourself and bring disgrace upon your family by the course which you are pursuing—out almost every night till eleven o'clock—can't be in very good company I know, and I must put a stop to it. Here you are, now seventeen, and never have been worth a penny to me all your days; you would be idle from morning till night, if you were not driven to your work—don't seem to be contented without a book, or some ragged leaf in your hand; just as if *books* would make a man! I am out of all patience with you; I am afraid you never will be anything but a dunce, after all I have done to make somebody of you. How can you expect to have an equal share with William; when he has labored hard to add to my means, while you have never earned your living? But now, answer my question, where have you been all this long evening?" "I have only been to Mr. Wisely's father; I hope you don't call *them* bad company." "I don't consider them very *good* company;—Wisely is a fool to spend all the money he gets, in giving his children learning—they would be much better off without it—it only makes them proud and conceited—he can't have much laid by for a rainy day; and there is Fred, he'll have to begin with nothing in the world—*hard rising at that;* and their daughter there, will doubtless marry a beggar, or what is no better; for *who* that *is* anything, will want a wife without some kind of a portion—a small portion is better than none at all."

Harry did not reply, and soon retired, but not to sleep. His noble spirit was wounded. He felt the truth of what his father had asserted, that he had never rendered him any great assistance, as his brother William had done. He felt that he could have willingly toiled to the utmost of his strength, had the object which he so much desired been offered as a reward for his labor. But no such hope urged him on to a performance of his duties—and to toil on for the purpose of heaping up wealth, he felt no heart to do.

Tossing about from side to side, he spent a night of feverish anxiety; and during those long and dreary hours he revolved many plans in his mind for his future course; but discarded them all as fruitless to attempt. When almost despairing, it seemed as if some gentle spirit, some angel of light, whispered words of consolation into his ear, and pointed out to him the path to pursue. The important decision was now made, and he calmly waited for morning to dawn, that he might put it into execution. Immediately after breakfast, Harry

addressed his father thus: "You remarked, sir, last evening, that I was of no benefit to you; and now, father, that being the case, you will not object to giving me my time, that I may make my own fortune in the world. I cannot expect anything from you when I have not deserved it, nor do I *ask* for such a favor; but I do *ask* that the request I have made may be granted."

Mr. Scrapewell was amazed, and fixed his eyes keenly on the face of his son; but the youth quailed not beneath that searching glance: the father read decision in his looks, and he felt that it were vain to remonstrate. At last he broke the silence which had ensued, by saying: "A grand fortune you'll make for yourself, no doubt: a boy that's good for nothing at home, can't be worth much anywhere else. But I've a mind to let you try—we shall not miss your help, that's certain: but what on earth are you going to do for yourself? go to Wiseley's, perhaps, and work for him, and let him spoil you by giving you learning."

Harry replied, by candidly informing him of his future plans, and ended by saying: "I shall doubtless have many dffiiculties to encounter, before I accomplish the object for which I will gladly toil; but be assured that though I fail, I will *never* bring disgrace upon my family."

Mr. Scrapewell gave his consent half in anger and half in surprise, at the determination of his before passive son; and as he did so, he handed him a purse saying, "here, take this to begin upon—it will be bad enough to come out a beggar at last, without being one at the beginning. There are three hundred dollars, and the sooner you get through with them the better; you will then be contented to come home and work for a living, if *I'm* not mistaken; and whenever you come to *that* determination, my house shall yet be your home; but not before;—and dont let any complaints about hardships and privation come back to us, hoping to excite our sympathy,—you have got all I shall ever give for such a purpose: three hundred dollars is quite enough to throw away."

Harry hoped he could return the loan at some future day, and soon after left his father's house, with joy and yet with grief.

He asked advice of Mr. Wisely, which was readily granted, with the promise that he would ever be his friend and counsellor. A few days more and Harry was attending school at A———, a town some sixty miles distant. This place had been selected, as Mr. Wisely was to remove there the ensuing spring to remain, until Fred. had gone through with his collegiate course.

We need not follow Harry through the long years which were spent in climbing up the hill of science. We need not speak of his difficulties; nor the privations which he suffered. What though he had oftentimes to toil with his own hands—what though he had oftentimes to become a teacher, that he might obtain means to supply his accumulating wants; yet on, *on* he sped; while his progress was such as to astonish all who witnessed the race. And here we will leave him to press still onward and *upward* in his shining career, while *Fame* was twining a wreath of evergreens to encircle his brow, and Applause stood beckoning him up to the pinnacle of her glory.

In due time, William Scrapewell was established in the mercantile business; a branch of industry with which he was totally unacquainted, and for which of course he was wholly unprepared, Mr. Scrapewell had selected this occupation for his son, thinking it highly respectable; and he could buy and sell goods and count over money without spending time or fortune in preparing himself for so doing. Alas! that there are so many Mr. Scrapewell's at the present day!

William married a dashing young belle, who was an heiress of course; and together they commenced a life of splendor. His industry seemed now to entirely forsake him—he felt that he was rich enough, he had been a slave all his days and would be so no longer. He had no taste for the business in which he was engaged, consequently every thing that concerned it was neglected.

I need not follow him through the wild course which he ran, for his history is similar to that of thousands of others.

But a few years had passed away ere his wealth was scattered to the four winds; dissipation marked his footsteps, and on he madly rushed down the precipice of sin and pollution, till his loathsome remains filled a drunkard's grave. His heart broken wife returned to her father's house to mourn over an ill spent life and disappointed ambition: and sank while yet in the bloom of youth to an early grave; This was a severe blow to Mr. Scrapewell, and for a long time it was feared he would not survive the shock. He had divided his wealth with his son, when he first commenced business for himself; and had oftentimes assisted him since that time to keep him, if possible, from bankruptcy. But he had failed in his efforts; and was not only doomed to behold him stripped of all he possessed; to witness the awful strides he was taking in his downward course; but to see him fall, *utterly fall*, unreclaimed, to rise no more!

It had been a long time since Mr. and Mrs. Scrapewell had heard from Harry, and now that their hearts were chastened, they yearned over their neglected and almost forgotten son. But they knew not his place of residence even if he were alive; which they almost doubted, and it was then with much satisfaction that they heard of Mr. Wisely's expected return to his old homestead; for they presumed he could give them information respecting him. Just at this period there was great excitement in the place where Mr. Scrapewell resided, in relation to a case which was pending in court; the result of which was looked forward to with the most intense anxiety by hundreds of citizens both far and near. It had been carried on from court to court until public spirit rose to such a degree as seemed to demand a speedy termination.

The day for the trial had arrived, and at an early hour the spacious court-house was filled to overflowing, with attentive listeners, eager to catch every word that should be uttered. The minds of that great multitude were swayed to and fro, as each side of the case was discussed with commanding eloquence and power! This mass of mind ran together as the mind of one man in favor of him who had just taken his seat, amid murmurs of applause; for though the majority felt that the decision must be contrary to what they had hoped; still they believed no one present had power to crush that speaker at a blow and render futile his every hope of success! Yet one more arose to speak although it was deemed entirely useless. Silence reigned through that vast crowd; not a breath was heard to disturb the awful stillness of the scene! The young lawyer commenced in a voice rich and deep, which strengthened as he proceeded, until it fell like thunder tones upon the ears of his enraptured listeners. The fire of eloquence lit up his eyes—beamed upon his face—burned upon his tongue as he carried captive that vast throng! He took his seat amid deafening shouts of applause, and suffice it to say, the case was decided in his favor. As the crowd was dispersing, Mr. Scrapewell was seen urging his way on towards a gentleman, who stood but a little distance from him. Upon reaching him he extended his hand, saying: "I am truly glad Mr. Wisely, to welcome you back again; did not know till this moment that you had arrived,—your family are all here I suppose." "All here; yes sir, and all well—walk along with me if you please; and call to see them while on your way home." "Thank you; I will do so, but pray tell me what young man that was who last addressed the court—he is a powerful speaker; and I could not keep my eyes from him long before he arose to speak, it seemed as if his countenance was familiar, and yet I cannot imagine who he can be." "That sir is my son-in-law, the husband of my sweet Jessie; *you* recollect *Jessie*; his name is Harry Scrapewell—you may perhaps have some *faint* remembrance of him also," and Mr. Wisely gazed intently into the face of his companion to see what effect his words had produced. That face was deadly pale, and not a word could escape the lips of the trembling man. Mr. Wisely witnessed his emotions, and drawing his arm within his own, they moved on in silence till they reached Mr. Wisely's dwelling. And here we would close the scene by letting the curtain fall; for we cannot describe the meeting of Mr. Scrapewell and his illustrious son, what tears were shed—what forgiveness was craved and granted, and what sorrows mingled with their cup of thanksgiving and joy. All this we will leave to the reader's own imagination, trusting they can do it better justice than we can with our feeble pen! It remains for us to say that Harry was again restored to the bosom of his family as its most honored member; and that he far outstripped the most sanguine hopes that his friends cherished concerning him. We may also add that Fred. Wisely became an eminent teacher in *divine things*. It was his delight to be about his Master's business—he toiled unceasingly for the salvation of souls and reaped a golden harvest of reward. Our simple story has been simply told, and a few reflections at its close may not be amiss.

There are awful responsibilities resting upon those, to whom are committed the training of immortal minds; and yet it is astonishing that so few, comparatively speaking, *feel* this to be the case! Many will nod and assent, when called upon, to look at the subject in its true light; but simply *assenting*, and *acting*, are two very different things.

Better, *far better*, to elevate and ennoble the immortal mind—to supply it with the food it craves—to expand all its energies—to dig deep into its unfathomable mines, and search out all its hidden resources;—better, *far* better *this;* than all the glittering trappings of wealth—the possession of flocks and herds, houses and lands—yea, and much silver and gold! Wealth, when looked upon in its proper light, is a blessing to mankind; but when it debases the mind—when it pollutes the soul with avarice, and coils itself around the heartstrings till every pulse thrills with trembling delight; then, *then*, it becomes a curse, and *woe* unto him who is its possessor!

HARRISBURG, Van Buren Co., Iowa, April, 1860.

Saint Louis Furniture Store,

WM. M. HARLOW, proprietor. Manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c., &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted, as recommended

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Clothing at Wholesale.

ARCHIBALD YOUNG & CO., 99 Main street, St. Louis, Mo. Wanzer Minor & Co., 126 Pearl street, New York, Moses Wanzer and Henry J. Minor, New York, Archibald Young, St. Louis.

N. B.—We manufacture all of our own goods, and sell at the lowest possible prices.

ROLLIN CLARK, JOHN RENFREW, } PHILANDER BRALEY, ALEXANDER CROSIER.

Eagle Foundry and Engine Shop.

NORTH west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, portable circular saw mills always on hand, all orders executed with fidelity and despatch.

A splendid fortune may be gained by an outlay of £10 or £5.

Metropolitan Portrait Club.

Offices—88, Albany road, London, England.

THE Directors beg to announce that there will be drawn for a grand series of portraits of all horses entered for the forthcoming Great Derby Race.

The drawing will be conducted upon those honorable principles which have hitherto given so great satisfaction, and secured to the above association such extenstve patronage; and that while the past success and high estimation in which the club is held are subjects of pleasing congratulation to the projectors, they encourage endeavors for a still further development of their plan. For the future, therefore, the number of prizes will be extended to the portraits of all horses that are entered for each particular race.—Non-starters as well as winners and starters. The following list is now open:

5,000 members to each class. First class £10, second do. £5, third do. £1.

Parties can have one or more shares in each or either of the different classes.

Those members who draw the portraits of first, second, and third horses, the other starting horses, also those that do not start (but which are entered for the race), will receive the following prizes. The drawing will take place ten days before the races.

	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portraits of Starters.	Do. Do. non starters
First class	£20,000	£10,000	£5,000	£5,000	£10,000
Second do.	10,000	5,000	2,500	2,500	5,000
Third do.	2,000	1,000	500	500	1,000

The number of prizes to be distributed in each class are 209, that being the number of horses entered for the race. All letters to contain a remittance drafts, bank-notes, &c., addressed and made payable to the managing director.

JOHN BURRIDGE, Esq, 88, Albany Road, London, England.

Numbers forwarded immediately on receipt of a remittance. Full particulars of the race will be sent with the fortunate numbers to each subscriber, so that he may know his position and whether or not he be one of the fortunate. Office commission 7 1-2 per cent., to be deducted from the above prizes.

N. B.—Lists open for the St. Leger same as the above.

HUDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

No. 158 Main Street, St. Louis, Mo.,

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' Tools, Machines, also, manufacturers of Jewett's Improved Patent Cary Ploughs.

J. BLATTNER,

MATHEMATICAL and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No. 68 North Second Street, between Pine and Olive, St. Louis, Mo., Manufactures and has always on hand; Surveyors Compasses and Chains, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, Hydrometers for acids and salts, Magic Lanthorns, Electrical Machines, &c., also— Surgical and Dental Instruments; Pocket, Dissecting, Cupping and Self-injecting Cases; Taylor's Shears, all sizes, Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; Large Scales and Weights, for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flasks, Game Bags, &c., ☞All the above Instruments repaired at short notice in the best manner.

CHARLES T. WILGUS. JOHN S. WATSON.

WILGUS & WATSON,

HOUSE, Sign, Steambot & Ornamental Painters, Glaziers, Paper Hangers, Whiteners and Wall Colorers, No. 52 and 54 Pine Street, Saint Louis. Also, Dealers in American and French Paper Hangings, in great variety and of superior quality; White Lead, Oil, Turpentine, Varnishes, Window Glass, Putty, and every variety of Paints, wholesale and retail.

WILSON & BROTHERS,

WHOLESALE DEALERS IN HARDWARE, corner of Main and Olive streets, St. Louis, Mo.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE, & CO.,

MANUFACTURERS and wholesale dealers in Hats, Caps and Straw Goods, No. 120 Main street, St. Louis, Mo.

HEWITT & STEINACKER,

SADDLE, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis, Mo.

M. B. COX. WM. M. SIMPSON. GEO. BURNET, JR.

M. B. COX & CO.,

WHOLESALE dealers in Boots and Shoes, Shoe Findings, Hats, Caps and Bonnets, Artificial Flowers, Umbrellas and Parasols, Pongee and other Silk Handkerchiefs, Hosiery and Gloves, Trimmings, Small Wares, and Variety Goods, No. 91 Main street, east side, between Locust and Olive, St. Louis, Mo.

J. A. ROSS,

SCALE AND SPUR Factory, Brass Foundry and Machine Shop, 202 north Second street, between Morgan and Cherry sts., St. Louis, Mo. Constantly on hand and manufactured to order, Platform Scales of all sizes, Counter and Druggist Scales, Flour, Floor, Hay and Car Scales. Also, Beam Scales, of Iron or Brass. Scales repaired with neatness and despatch. Spurs, for Dragoons and others, and Brass Castings furnished on short notice.

P. WONDERLY,

MANUFACTURER of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper Kettles, Well and Cistern Pumps, and every other article in his line of business; No. 233 Main street, south east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

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PAWLEY & HAWKINS,

MANUFACTURERS OF FIRE PROOF VAULTS, Safes, Iron Window Shutters and Doors, cast and wrought iron Railings, and all kinds of ornamental iron work. Also, heaters for public and private buildings.

In the manufacture of Iron Railing, either wrought or cast, over five hundred designs in their possession may be examined, embracing all the most beautiful patterns of the eastern countries, public and private buildings.

Every article in their line, made with despatch; and warranted equal to any manufactured in the United States. No. 41 Third street, St. Louis, Mo.

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WHOLESALE Dry Goods dealers, 131 and 133, Main street, St. Louis. Job P. Doan, St. Louis, Wylley King, do., Richard Bigelow, New York.

Edward Mead,

IMPORTER and wholesale and retail dealer in watches, jewelry, cutlery, guns, pistols and fancy goods, No. 83, north Fourth street, first block north of Planters' House, east side, St. Louis, Mo.

Crow, McCreery & Co.,

WHOLESALE dealers in Dry Goods, No. 71 Main street, St. Louis, Mo. Wayman Crow, Phoceon R. McCreery, Wm. H. Barksdale, Wm. A. Hargudine, Chas. D. Appleton.

Woods, Christy & Co.,

WHOLESALE dealers in Dry Goods, No. 75 Main street, St. Louis, Mo. James Woods, William T. Christy, James C. Christy, Robert K. Woods.

Protect Your Property.

HAVING made an important improvement in the application of Blake's Slate Paint, for which I am obtaining Letters Patent, I am prepared to do any amount of work, in the roofing line, or to furnish any person with the slate, in sheets or rolls, containing from 2 to 600 feet in a roll; and any person can lay it over his roof himself. Farmers and merchants can have their warehouses, barns and dwellings rendered perfectly fire proof by this means. I charge $5 50 per square of 100 feet. In building, nearly one fourth of the entire cost may be saved by having the roofs flat. The gable walls and steep roof being dispensed with if thought best; thus making the cost of a roof of my slate less than even shingles; and one half less than Welsh slate, or iron. I can do work for persons out of the city if desirable, provided the distance is not too great from the rivers. Persons wishing to embark in the roofing business, can buy the right to any territory they wish, at low rates; and are sure to make money if they are industrious. I am prepared to fill all orders that may present for doors, sash, blinds, flooring, &c., at lower rates than any one in the west. No order will be filled without the cash. Any particular form of sash or doors made to order. Manufacturers, as usual, supplied with any kind of machinery. Patents secured. Engraving done.

Blake's slate paint always on hand, in any quantity. Letters, post paid will be attended to. No. 65 Locust street, St. Louis, Mo.

JOSEPH E. WARE.

Washington Foundry.

CORNER of Second and Morgan streets, St. Louis, Mo. We are prepared to fill with dispatch, and to fit up in superior style, all orders in the Foundry and Machine business, such as steam engines, mill work, mill castings, railroad cars, wheels for coal trucks, lard and soap kettles of all sizes, press screws, &c., made to order at short notice Wool carding machines, shearing machines, and a large and superior stock of machine cards, which we warrant equal to any in the Union.

All orders from the country will meet with prompt attention.

J. T. DOWDALL & CO.

Great Western Clothing Emporium!

WHOLESALE AND RETAIL,

No. 124 *and* 126 *Second street, corner of Vine.*

W. L. & J. BIGELOW & Co., St. Louis, Mo.

BAKER, NELSON & Co, 51 Cedar street, New York.

Fallon & Wright,

CARRIAGE manufacturers and dealers, No. 90, Fifth street, between St. Charles and Locust, are constantly manufacturing, and have on hand, all styles of carriages, which they will sell on the most reasonable terms. They flatter themselves from the experience they have had in the business, to be able to furnish as good an article as can be bought in any market. Citizens and strangers are requested to call and examine for themselves. All carriages made by us are warranted to be as represented, or the money refunded.

WESLEY FALLON,
JAS. A. WRIGHT.

John Mullery,

PREMIUM Horse Shoer, in the alley, opposite the Post Office, will as usual pay particular attention to the various diseases affecting the feet of horses, and will guarantee to give general satisfaction in either of the above departments.

Fruit Trees and Shrubbery,

For sale by JOHN SIGERSON & BROTHERS, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment. The Nursery and Gardens are open at all times (Sundays excepted) for the reception of visitors. Horticulturists and Amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. Their prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondolet, will meet with prompt attention.

JOHN SIGERSON & BROS.

J. BUNDING. B. VOIGT.

Bunding & Voigt.

WHOLESALE dealers in drugs, chemicals, paints, oils, dye-stuffs, window glass, glassware, &c., &c. No. 100 Main street St. Louis, Mo.

P. Hayden,

(SUCCESSOR TO P. WILSON & CO)

IMPORTER and manufacturer of saddlery, hardware, carrriage trimmings, saddle trees, hog skins, skirting, harness and bridle leather, wood and iron hames, &c. 47 Second street, (east side, between Pine and Olive streets,) St. Louis, Mo. Manufacturing the greater portion of the articles in my line, and importing the remainder, my advantages are superior to *any house in the trade.*

GLOVER & CAMPBELL,

Late of Palmyra, Mo., Attorneys at Law,

SAINT LOUIS.

John C. Meyer,

Dealer in Hides, Leather, Oil and Findings,

No. 88 North Main Street, St. Louis.

H. W. LEFFINGWELL, Notary Public. R. S. ELLIOTT, Com'r of Deeds.

Leffingwell & Elliott,

REAL ESTATE Dealers, Auctioneers and Conveyancers, No. 123 Chesnut street, St. Louis, Mo. Real Estate sold on commission, at private sale, or auction. Also, Deeds of all kinds written, and acknowledgments taken. Maps of the city and additions, to be seen at the office, and information given free of charge. Surveying done promptly and correctly.

Charless & Blow,

NO. 70 and 72, Exchange Building, St. Louis, Mo., Importers and dealers in drugs, medicines, oils, paints, dye stuffs, perfumeries, window glass, glassware, &c.

O. W. Jerome,

WHOLESALE and retail dealer and manufacturer of Cabinet Furniture, chairs, bedsteads, &c., Nos. 44, 46 and 48, Olive street, opposite the Monroe House, St. Louis, Mo.

Sligo Book Store and Paper Warehouse.

AMOS H. SHULTZ, No. 136, north Main street, St. Louis, opposite the Bank. Wholesale dealer in books, paper and stationery.

THE undersigned takes the liberty of informing you that he has removed his place of business to Olive street, a few doors above Main, south side, in the Exchange Building, and three doors above Messrs. E. W. Clarke & Co.'s Banking House, where he is now opening, and will continue to receive during the Spring months, a large and full assortment of the most

Fashionable Styles of Goods,

In his line, for gentlemen's wear; and where he will be pleased to see his old friends and customers, and their friends with them; and assures those who may favor him with their patronage, that they shall receive his personal attention, and his best efforts to please. Very respectfully, your ob't servant,

J. G. SHELTON.

Giles F. Filley,

MANUFACTURER of the celebrated prize premium cooking stoves; also, Irving's air tight cooking stoves, fancy parlor stoves, fancy box and coal stoves; dealer in tin plate, copper, sheet iron, block tin, rivets, tinner's tools, machines, &c. Warehouse No. 163 north Main street, St. Louis, Mo. Foundry on Lewis street, near the water works.

TOBACCO.

T. MULLEN, Tobacco Commission Merchant, 21 Washington Avenue, St. Louis, Mo. for the sale of Cuba and Havanna Tobacco; also, for Virginia manufactured tobacco, for which he has the agency.

J. HENWOOD,

Hat Manufacturer, 72 Chesnut Street, St. Louis, Mo.

Missouri State Mutual Insurance Company.

DIRECTORS:—John O'Fallon, C. M. Valleau, Reuben Knox, Daniel D. Page, Oliver Bennett, John Sigerson, John S. McCune, Joseph A. Eddy, True W. Hoit.

This company is established upon the mutual principles of insurance, and is emphatically a home institution. The fire risks of this company are extended into all parts of this State. Its earnings are never employed or invested in stocks or real estate, but kept for the prompt liquidation of losses, and under the immediate control of the Directors. Every person insuring with this company becomes interested in its success, and its profits instead of being divided among a few stockholders, belong to those who insure in this company.

The Directors aware of the importance of a well secured fund, reliable in case of loss, and ample under all ordinary calamity, assure the public that they have already a pledged fund ample and reliable for any contingency, with a monthly increase of premiums of over ten thousand dollars. For the length of time this company has been in operation (six months) its business has been extended into all parts of the State and the city, and has received from the public a liberal patronage, which has placed it upon a permanent basis.

By an act incorporating this company, the parties insuring property therein, are entitled to the entire profits of the institution, the premium notes are also pledged by the charter for the payment of losses.

The portfolio of the company is at all times open to the inspection of its members and those wishing to make insurance with it. Policies are issued from thirty days to six years, thereby effecting a permanent insurance, with a return premium of from fifteen to fifty per cent., according to the term of insurance.

Agents for this company, may be found in all the principal towns in the State to whom applications may be made.

Office of the company over E. W. Clark & Bro., corner Main and Olive streets, Exchange building, where insurance will be effected at the tariff rates of premium.

C. M. VALLEAU, President,

H. D. BACON, Treasurer.

S. F. LEDYARD, Secretary.

Home Mutual Fire and Marine Insurance Company of St. Louis.

NOTWITHSTANDING the heavy loss sustained by this company in May last, the stock notes now on hand amount to $350,000. The stock notes of the company are secured by lien upon real estate and approved endorsers. Office, No. 120 North Third street.

Directors:—I. L. Garrison, A. P. Ladew, P. Salisbury, Jno. Whitehill, Jos. A. Eddy, Henry Kayser, D. D. Page, Theron Barnum, John Kern.

ISAAC L. GARRISON President,

D. D. PAGE, Treasurer,
PHILANDER SALISBURY, Secretary.

JOHN D. M'MURRAY JAMES M. DORMAN

M'MURRAY & DORMAN,

IRON RAILING MANUFACTORY corner of Third and Pine Streets, continue to manufacture at the above establishment, all kinds of Plain and Ornamental Iron Railing, Balconies, Bank and Jail Doors, Book Safes, Fire-Vaults, Iron Window Shutters, Iron Awnings, Lightning Rods, Bedsteads, Gratings, and in fact, any thing which can be formed of Iron.

BURD, RUCKER & CO.,

No. 45 Main Street, St. Louis Missouri,

MANUFACTURERS of Copper, Tin and Sheet Iron Ware, Lead Pipe, Sheet Lead, Bells weighing from 20 to 400 pounds, Brass Castings, Beer and Soda pumps, and general Stove Dealers.

WESTERN BANK NOTE,

Card, Seal, and General Engraving Office,

No. 25 Chesnut Street, nearly opposite the Republican Office,

BANK NOTES, Bills of Exchange, Bill Heads, Diplomas, Business, Professional, Visiting Wedding and other Cards,; Notarial, County, Odd Fellows, Sons of Temperance, Masonic and Probate Seals: Wood Cuts, Xylographic Plates, Stencil Brands, Jewelry, Silver Ware, &c., engraved in a superior manner by

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ATTORNEY AND COUNSELLOR AT LAW,

Office—No. 97 Chesnut street,

St. Louis, Mo.

CHARLES & HAMMOND,

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☞ Publishers of Newspapers who will insert the foregoing prospectus in their papers, once in three months, will be furnished with the work for one year.